NOTE

This Microfiche meets the quality requirements of the American National Standard for Microfiche of Documents (ANSI PH5.9-1975). However, because of imperfections in the document from which it was made, it contains images that are illegible or difficult to read. The source document for this microfiche is the best copy that could be obtained prior to filming.

CIS Congressional Information Service, Inc
Washington, D.C.

S. HRG. 100-245

PROTECTION OF GROUNDWATER RESOURCES IN THE STATE OF MAINE

HEARING

BEFORE THE

SUBCOMMITTEE ON
ENVIRONMENTAL PROTECTION

OF THE

COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

FIRST SESSION

JULY 2, 1987

Printed for the use of the Committee on Environment and Public Works

U.S. GOVERNMENT PRINTING OFFICE
77-852 WASHINGTON : 1987

For sale by the Superintendent of Documents, Congressional Sales Office
U.S. Government Printing Office, Washington, DC 20402

S321-34

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

QUENTIN N. BURDICK, North Dakota, *Chairman*

DANIEL PATRICK MOYNIHAN, New York	ROBERT T. STAFFORD, Vermont
GEORGE J. MITCHELL, Maine	JOHN H. CHAFEE, Rhode Island
MAX BAUCUS, Montana	ALAN K. SIMPSON, Wyoming
FRANK R. LAUTENBERG, New Jersey	STEVE SYMMS, Idaho
JOHN B. BREAUX, Louisiana	DAVE DURENBERGER, Minnesota
BARBARA A. MIKULSKI, Maryland	JOHN W. WARNER, Virginia
HARRY M. REID, Nevada	LARRY PRESSLER, South Dakota
BOB GRAHAM, Florida	

PETER D. PROWITT, *Staff Director*
BAILEY GUARD, *Minority Staff Director*

SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION

GEORGE J. MITCHELL, Maine, *Chairman*

DANIEL PATRICK MOYNIHAN, New York	JOHN H. CHAFEE, Rhode Island
MAX BAUCUS, Montana	ROBERT T. STAFFORD, Vermont
FRANK R. LAUTENBERG, New Jersey	ALAN K. SIMPSON, Wyoming
JOHN B. BREAUX, Louisiana	DAVE DURENBERGER, Minnesota
BOB GRAHAM, Florida	LARRY PRESSLER, South Dakota

CONTENTS

	Page
Mitchell, Hon. George J., a U.S. Senator from the State of Maine, opening statement of	1
WITNESSES	
Aho, Patricia, attorney, Maine, Chamber of Commerce and Industry	31
Written statement	85
Marriott, Dean, Commissioner, Department of Environmental Protection, State of Maine, and chairman, State Groundwater Standing Committee	3
Written statement	37
Letter to Senator Mitchell	43
Additional information supplied for the record	45
Cline, Michael, director of research and policy analysis, Maine Audubon Society	26
Letter to Senator Mitchell	29
Written statement	82
Kany, Hon. Judy, senator, Maine State Legislature	32
Lander, Philip, chairman, Environmental Committee, Associated General Contractors of Maine	16
Letter to Senator Mitchell	18
Written statement	71
Lee, Cathy, KTI Holdings, Maine Energy Recovery Co., Portland, ME	33
Letter to Senator Mitchell	20
Timson, Barry, mayor of Hallowell, ME, representing the Maine Municipal Association	22
Written statement	74
Usher, Hon. Ronald E., senator, Maine State Legislature, and chairman, Energy and Natural Resources Committee, State Legislature	8
Walker, John, executive director, local Council of Governments, and president, Association of Regional Planning Commission Directors	11
Written statement	65

PROTECTION OF GROUNDWATER RESOURCES IN THE STATE OF MAINE

THURSDAY, JULY 2, 1987

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION,
Augusta, ME.

The subcommittee met, pursuant to notice, at 10:35 a.m., in room 228, State Capitol Building, Augusta, Maine, Hon. George J. Mitchell (chairman of the subcommittee) presiding.

Present: Senator Mitchell.

OPENING STATEMENT OF HON. GEORGE J. MITCHELL, U.S. SENATOR FROM THE STATE OF MAINE

Senator MITCHELL. Good morning, ladies and gentlemen, and welcome to this hearing of the United States Senate Subcommittee on Environmental Protection. The subject of today's hearing is the protection of groundwater resources.

Groundwater is a natural resource of tremendous value. More than half of all Americans depend on groundwater for drinking water. Three-quarters of our cities get their water supplies totally or in part from groundwater; 90 percent of rural households have no source other than groundwater for drinking water.

Here in Maine, almost 60 percent of the population relies on groundwater for drinking water supplies. Some people receive groundwater from community water systems; a great majority rely on private wells. Groundwater is a resource so widely used and so essential to life that we take it for granted, much like the air we breath. Unfortunately, this crucial resource is threatened by contamination on a wide scale.

Groundwater pollution problems have been documented in recent studies by the Academy of Natural Resources and the Congressional Office of Technology Assessment and the Environmental Protection Agency. These studies conclude that groundwater contamination is being detected with increasing frequency and that a widespread problem may already exist.

Maine has not escaped groundwater pollution. Many of you are familiar with groundwater pollution problems caused by leaking underground gasoline tanks, waste disposal sites, and subsurface sewage disposal. We've made some progress in addressing groundwater problems at the national level, and even more so here in Maine. Congress has enacted laws to protect groundwater from

contamination by leaking underground storage tanks and prevent pollution of public water supplies near wellhead areas.

This year, several groundwater bills have been introduced in Congress, where they are now pending. I have cosponsored bills that provide for comprehensive research of groundwater resources, improved groundwater research, and to control contamination of groundwater from pesticides. As we will hear today, the State of Maine has also taken steps to protect the quality of its groundwater. Maine is a national leader in responding to the problem of leaking underground gasoline storage tanks. Maine has just enacted a new law which will help prevent groundwater contamination from solid waste disposal sites, and over the past two years Maine has initiated a range of information and planning projects and has improved coordination among the agencies responsible for groundwater quality.

The purpose of today's hearing is to learn about the extent and seriousness of groundwater pollution problems in Maine and to hear about the steps being taken by State agencies and others to respond to these problems. I hope we can identify programs developed in the State which may be appropriate for inclusion in Federal legislation. We may also identify programs which could be included in Federal legislation to support Maine's current groundwater program.

With first-hand knowledge of groundwater problems and programs in Maine I can try to assure that national groundwater legislation meets the needs of Maine, as well as the rest of the Nation.

I expect legislation in this area to be under increasingly active consideration in the Congress in the next year. My colleagues and I on the Senate Environment Committee will face a number of basic policy issues. We will need to decide whether it is necessary at all for Congress to develop national groundwater protection legislation. Two, we will need to decide whether to focus on specific and limited sources of contamination, such as, say, landfills, or whether more comprehensive legislation similar to the Clean Air Act or the Clean Water Act is needed. We will have to decide how to balance attention and resources between programs to prevent contamination and programs to clean up contamination where it already exists, and we will need to divide responsibilities between the Federal Government and the State governments.

We are fortunate to have a diverse and experienced group of witnesses here today to address these issues. The first witness is Mr. Dean Marriott, Commissioner of Maine's Department of Environmental Protection and Chairman of the State Groundwater Standing Committee.

We will hear, then, from two panels, and I will identify them as soon as Commissioner Marriott is through. Following the scheduled witnesses, if any member of the public wishes to speak, I will be glad, then in whatever time remains, to hear any statement that any person would like to make.

Mr. Marriott, welcome. We appreciate your taking the time to come here, and look forward to your testimony. Please proceed.

STATEMENT OF DEAN MARRIOTT, COMMISSIONER, DEPARTMENT OF ENVIRONMENTAL PROTECTION, STATE OF MAINE, AND CHAIRMAN, STATE GROUNDWATER STANDING COMMITTEE

Mr. MARRIOTT. Thank you very much, Senator Mitchell. It is indeed a pleasure to appear before you here today.

I have held the position of Commissioner of Environmental Protection just since February, and I can assure you I've learned more about groundwater in the last five months than I would have imagined.

I do have a six-page prepared statement which I would like to submit for the record, but I think I would just prefer to summarize some of my remarks at this time. I also have a letter that I would like to submit for the record from the State Geologist, Walter Anderson, and I believe we have adequate copies of that for you.

I am the Chairman of the Governor's Standing Committee on Groundwater, which is a subcommittee of the Land and Water Resources Council, which is a cabinet committee dealing with natural resources in Maine. On this subcommittee we have a variety of State agencies, all of whom deal in one way or another with groundwater issues here in the State, so in this way we try to bring together the various players and actors in the State so that we can be sure that we have a coordinated approach to groundwater.

I think we've made a great deal of progress. I'm very impressed in the last few months with what I've learned about what we've been doing here in Maine. I think it is something that everyone in Maine should be very proud of. I know we're all looking forward to the next few years when we hopefully can get out in front of this problem so that we can avoid trying to play catch-up and clean-up and can finally get to the stage where we are preventing more of these problems than we are trying to clean up.

You did mention earlier that the State now has new legislation on the books that was enacted just this session dealing with leaking underground storage tanks; in fact, it deals with all underground petroleum storage tanks, whether they are leaking or not. We have established a 10-year time frame in which to get all of the bare steel or asphalt-coated tanks out of the ground. This is based on our experience. In the last year we have taken out—there have been about 2,000 tanks taken out of the ground, and about half of those have shown evidence of leakage.

So the Governor was very interested in this subject; the Department, of course, was very interested in this subject, and the Legislature was very interested, and with all of us working together we put this legislation in and it was adopted. We are now starting on this 10-year time frame to get these unprotected tanks out of the ground. And again, I hope that what this will mean in the future is that we will be ahead of the problem. We will no longer be running around the countryside spending hundreds of thousands of dollars of the taxpayers' money to clean up the mess. So we're very enthused about that.

An interesting point, though, is that EPA has some draft rules out about leaking underground storage tanks, and in fact, all storage tanks, as well. One concern I have is that those draft rules not create a conflict with our recently-adopted statutes and soon-to-be-

adopted regulations, so that a year from now, when the EPA puts those rules into effect, we then have to back up and change all of our statutory language. It seems to me that if our program on balance meets the Federal requirements, then we should be allowed to proceed ahead with implementing our own program.

Another possibility to consider would be some technical assistance from the Federal Government as far as tank design and installation standards. There has been a lot of discussion about the best way to actually put these underground tanks in. There is a variety of opinions on that, and I think that if the Federal Government would provide some assistance on providing national standards for the installation of tanks, that would provide a great help to us.

In the area of solid waste, the new Federal legislation is less important than appropriation of funds to help implement the solid waste requirements of the Resource Conservation and Recovery Act. State and local governments are faced with huge expenditures in trying to clean up solid waste problems that have been around for years. As you mentioned, the State has just passed a significant new piece of solid waste legislation that attempts to, again, get us out in front of this problem, clean up the old dumps that are leaking and affecting groundwater, and adopt some new standards so that we can be sure that any new landfills that are built will not create a hazard to our groundwater supply. The problem is the cost in cleaning up these hundreds—literally hundreds—of dumps spread out all over the State. The Legislature is recommending an $8 million bond issue this year to provide State assistance to municipalities to do that job. We view that as merely the first installment in many installment payments on this cleanup effort.

The one thing that's of interest to us at the State level would be some additional Federal efforts on source reduction to encourage recycling and the reuse of materials to try and reduce the amount of solid waste that is in fact generated and has to be disposed of. The State of Maine has this year established an Office of Recycling, and we will be studying efforts to improve markets for recycled goods, again, in an effort to reduce the amount of waste that enters the waste stream.

Another pollution problem that we're coming to grips with here in Maine that I'm sure has at least a sizeable part of the country affected is the problem of salt-sand piles. As I'm sure you know, those salt-sand piles are spread out all over the State—there are thousands of them—and their impact on groundwater quality is now well-documented. The Department of Transportation has included in their bond package this year money so that the State can provide buildings for its salt-sand piles. Unfortunately, this leaves the municipalities with a long way to go to provide coverage for their piles. We view this as a significant area where perhaps some sort of Federal cost-sharing program would be appropriate.

My experience in the last few months has shown me that normally, by the time the Federal Government programs get started in many areas, particularly here in Maine, the State programs are already up and running. I mentioned this regarding the underground storage tanks.

What we are most interested in is to see to it that the Federal Government appreciates the fact that in States where those States have existing programs, that the new Federal efforts do not force the States to backtrack and reconfigure their own programs, spend a lot of time and money coming into strict conformance with the Federal standards if in fact, on balance, the State programs are effective.

One area that hasn't been mentioned in a while but one that is of increasing concern to me is the effect of additional residential growth on groundwater quality. As you mentioned, a substantial number of Maine citizens depend on their own individual wells for their water supply. The more land that is consumed by suburban sprawl, the more individual well systems are installed and the more leach fields there are installed that also may affect groundwater.

We have started a two-year program here in Maine to provide some geohydrologic experience to these towns that are concerned about the effect of residential development on their groundwater supplies. We think this is a good start. Again, perhaps a Federal incentive program could be created to better equip local officials to deal with groundwater threats at the local level. The Federal Wellhead Protection Program would appear to be a good start, but it fails to consider areas beyond the coverage of a public water utility. So much of Maine depends on individual wells and not public utilities for their water supply that that Federal Wellhead Protection Program is of limited benefit to us here.

What underlies this whole problem, in my view, is that in general there is a lack of good, basic groundwater data for us to evaluate. There is a pressing need for a better understanding of the various groundwater resources we are trying to protect. The groundwater situation in Maine is not the same as the groundwater in Texas or New Mexico or the State of Washington. We have some unique geology here and soils and subsurface conditions that make the State of Maine a little bit different from anyplace else; therefore, we have a particular need to generate our own data base so that we can judge the impact on our resource. Maine's efforts to identify and map our sand and gravel and bedrock aquifers are hindered by a lack of funds. We are trying; we are making the effort, but it is a long, slow process, and the longer that it takes us to build up that data base, the longer the areas that aren't mapped are unprotected. The same can be said for the radon problem. We are coming to grips with this, and I think more and more evidence is coming to light, particularly in the northeastern part of the United States—New Jersey, Pennsylvania, New York—people are very concerned about radon. We could use some Federal assistance in exactly what the threat is and how to deal with that problem.

Senator MITCHELL. Just recently, legislation was introduced creating a Federal matching program for States on radon, and we hope to have that before the Senate for action in the near future. After some weeks of negotiation we were able to obtain Administration support for it, so we're very hopeful that we will have a financial program in place soon.

Mr. MARRIOTT. Well, that would be a big help to us.

Just as an aside, I recently sold my own home. The new buyer asked for a radon test, and I said, "Well, we're on public water so you don't need a radon test." Of course, they did the radon test, and it showed I had a problem. I must say, even as Commissioner of Environmental Protection, I didn't know very much about radon, and I had to go out and find the appropriate sources of information. And I must say, it is not a unanimous opinion as to what should be done about that problem. Luckily the new buyer was understanding and is going to buy the house anyway, but I've learned first-hand that radon is a problem in Maine.

Senator MITCHELL. You mentioned the need for data. In addition to the EPA, the other Federal agency involved is the U.S. Geological Survey. There has been some effort to expand the role of the Geological Survey to do precisely what you suggested that is needed, to give a more accurate and prompt assessment. But you say that that lack of data, a simple lack of knowledge, is the biggest single problem you face here in Maine in terms of dealing with the problem, assessing the circumstances?

Mr. MARRIOTT. I think that if you start with the premise that in order to make intelligent decisions you need good, accurate data, then I would say it probably is our biggest need for the time being. Until we get that data base built up, in some parts of the State we're just having to make educated guesses about things.

Senator MITCHELL. So an area of assistance that you would suggest would be for the U.S. Geological Survey to provide a greater level of assistance in assessing the problem?

Mr. MARRIOTT. I think a cooperative effort with our own Geologic Survey would be very helpful.

Just to conclude my statement, another area which is of concern to me which I determined since I've been here is that there is a tendency on the part of Federal programs to get the States started and then to cut them loose, to reduce the funding and then tell the States, "You're on your own." We've been dealing with that the last few years and are making every effort to deal with that in the future, but one thing about a new Federal role in groundwater is that I would hope such a role would anticipate that there would be at least adequate resources to get us to where we are sort of self-sufficient so that we can fend for ourselves, and not get us halfway down the road and then say, well, "We've run out of money; finish the job yourselves." I think that's very important from our perspective.

I don't want to just leave you with the impression that all we're after is money, because I'm sure you've heard that story before. We are tackling as many of these problems as we can. I'd be kidding myself if I didn't say we could use some Federal funds, and I've said that already.

I think what's most important to us is that an appropriate Federal role, I think, would be to provide some basic performance standards in the area of groundwater; provide some technical assistance—I mentioned radon, but some technical assistance with risk assessment, health effects—there's no particular reason why the State of Maine should be doing its own risk assessment on certain chemicals that have a national exposure problem.

Senator MITCHELL. In other words, information about the effects of specific contaminants?

Mr. MARRIOTT. Yes.

Senator MITCHELL. So that the assessment of the risk of a particular contaminant need not be duplicated in every State?

Mr. MARRIOTT. That's correct. It makes no sense from my standpoint for the State of Maine to launch its own investigation into the risks of dioxin or something when that probably is going on somewhere else.

Again, I think if we look at that—performance standards, technical assistance—if the Federal Government does decide that it's appropriate to have a broad groundwater policy and bring in some of these disparate programs under one roof, I would like to suggest that perhaps the approach would be to give us some guidelines, but recognizing that Maine is not the same as other States, as long as we work within those guidelines perhaps a block grant groundwater program might be appropriate so that—even though we don't have underground injection here in Maine, we could still share those funds and use it on something that is appropriate.

Senator MITCHELL. Thank you very much, Mr. Marriott, for an excellent statement. There are some valuable suggestions and answers to some questions that we will have to ultimately decide on.

I know that this State has done a great deal, and I am confident that you and the other State agencies have reviewed the work of the Groundwater Standing Committee. The Governor, while he was a Member of Congress, and I cochaired a hearing on this subject in Portland in 1985, and I am pleased that he has continued that interest in his current position.

I understand this State is now working with several communities to develop a groundwater classification system. If you can do so now, or prefer to do this in writing later, can you describe the program, the objectives of the classification system, how it will work?

Mr. MARRIOTT. Well, we are working with a couple of towns in detail, sort of as a pilot program, and I would be happy to provide the details of how that was set up and precisely what the objectives are to you. We're very excited about that and hope that it will be a successful pilot program and that we can make broader use of those results in the future.

Senator MITCHELL. I would appreciate it very much if you would do that. (See p. 45.)

Senator MITCHELL. You have already indicated that you prefer a Federal program that provides technical assistance, particularly information regarding the effects of specific contaminants to obviate the need for the States to do that, and maximum flexibility in terms of implementing your own groundwater programs. You would not like to see some kind of specific national standard or specific national means of achieving groundwater contamination prevention and reduction, but rather that the Federal Government provide information and leave it up to the States to adapt to their particular problems.

Mr. MARRIOTT. Well, I mentioned, perhaps, that national performance standards would be appropriate. They would allow those States who are planning their own way to reach those standards, to do that. I'm not that familiar with what every State in the Union

is doing, and perhaps some will need a nudge. So I didn't mean to say I was opposed to some sort of national performance standards. I think they might be appropriate.

Senator MITCHELL. All right. Thank you very much. That was very helpful testimony.

Mr. MARRIOTT. Thank you for the opportunity to appear before you.

Senator MITCHELL. Okay. We'll look forward to getting your statement on the classification program. I want to see whether that may be adaptable.

Mr. MARRIOTT. Thank you. I would like to just mention that I'm going to run out, not because I'm not interested in what the other people have to say, but I mentioned that I sold my house and the movers are arriving at 12:00 o'clock, and I want to be there. If I'm not there, they've threatened to take my furniture wherever they want it.

Senator MITCHELL. Good luck.

Mr. MARRIOTT. Thank you very much.

Senator MITCHELL. The next panel will consist of State Senator Ronald Usher, Chairman of the Energy and Natural Resources Committee of the State Legislature; John Walker, Executive Director, Local Council of Governments, and President, Association of Regional Planning Commission Directors; and Mr. Philip Lander, Chairman of the Environmental Committee, Associated General Contractors of Maine. Would you gentlemen come forward, please?

Good morning and welcome. We look forward to hearing from you. Your full statements will be inserted in the record of the hearing. I would ask that you summarize them and hit the high points.

Senator Usher, we look forward to hearing from you.

STATEMENT OF HON. RONALD E. USHER, SENATOR, MAINE STATE LEGISLATURE, AND CHAIRMAN, ENERGY AND NATURAL RESOURCES COMMITTEE, STATE LEGISLATURE

Senator USHER. Thank you, Senator. Welcome back to the great State of Maine.

Senator MITCHELL. It's nice to be home.

Senator USHER. I'd like to compliment you on your choice of meeting times. I've always been of the opinion that a Maine summer day is superior to a Washington, D.C. summer day anytime.

I would also like to express my support for your efforts to tackle this serious issue of groundwater protection. Federal legislation is definitely necessary. As Senate Chair of the Energy and Natural Resources Committee in Maine, I find that a rapidly-growing fraction of my time is being spent on this issue. Other speakers today will provide the subcommittee with a full description of Maine's groundwater problems and programs. I would like to focus on our recent legislative initiatives that concern groundwater, and I will also touch on a few areas that I believe will benefit from some Federal attention.

On the solid waste issue, in the most recent session of the Legislature, which we just completed, my committee recommended legislation to establish a comprehensive program for solid waste man-

agement. The driving force behind this legislation was concern over groundwater contamination from existing and future waste disposal facilities. The centerpiece of this legislation is a program to clean up and close old dump sites around the State. These are the sites which have fallen between the cracks of the Federal and State Superfund efforts but which, nonetheless, pose serious environmental hazards.

Our objective is to lift the financial shackles which have prohibited rapid action by the municipal owners of these sites. The State will offer technical and substantial financial assistance to these municipalities. All remediation and closure efforts will be done in accordance with plans approved by the State. This step is taken to ensure long-term protection of groundwater quality and to avoid the costly errors we have experienced from improper closing. A separate companion effort is under development to address the same concerns stemming from private dump sites. Other portions of the new legislation will set in motion efforts to reduce and better manager our future solid waste stream.

Taken as a whole, I view this legislation as an important groundwater protection measure. I have included a copy of the legislation in the committee's report for your use.

In regards to groundwater protection, in addition to the solid waste legislation my committee also developed a groundwater omnibus bill which strengthened the groundwater program already in place. The legislation accomplishes a number of objectives. First, it establishes clear protection of private water supplies from the actions of the State and a subdivision in road building and maintenance. Second, it provides protection for private groundwater use rights. Third, it provides a substantial overhaul of Maine's underground tank law which, most importantly, is the establishment of a removal schedule which will eliminate all bare steel tanks over the next 10 years. It will include the damage claims process, which has also been streamlined to provide faster compensation to those damaged by the leaking tanks. It includes research into the environmental hazards posed by above-ground tanks. Finally, it authorizes development of a disposal assistance program for generators of small quantities of hazardous waste, including household hazardous wastes. I have included a copy of this legislation for your use.

Areas that I feel require Federal attention in regards to solid waste—in the process of developing the solid waste legislation, we discovered that a substantial quantity of solid waste is sent to Maine from other States. This was of major concern to our committee. Because of the constitutional protection afforded by the interstate commerce law, there is not much the State can do to restrict this flow. Our concern is that many of these other States are not facing up to their responsibilities for their own waste. Some States, for example, give the local board of health a final veto over the disposal of any waste within its jurisdiction. This authority is widely abused and results in literally thousands of tons of waste per year coming to Maine landfills. Obviously, we are concerned about the impact of this material on our groundwater as we have only a limited number of sites suitable for landfills.

My committee feels strongly that there should be more interstate cooperation on solid waste management, but what are the incen-

tives for these other States to cooperate? My committee staff has been told by officials in these States that as long as the disposal capacity in Maine exists, it is the path of least political resistance to continue sending their waste to Maine. We are being penalized for acting responsibly in being the rural hinterland of the urbanized areas of the mid-Atlantic seaboard.

Many other States around the country are in the same position as Maine. We feel that the Federal action is essential to encourage the interstate cooperation that is necessary. States such as Maine need some leverage to bring these other States to the bargaining table. Perhaps your committee could explore the Low-Level Radioactive Waste Policy Amendments Act of 1985 as a model for interstate cooperation on solid waste.

Remember that homeless garbage barge from Long Island. There will be many more like it, and the ultimate loser will be groundwater quality somewhere.

In regards to groundwater management, Maine has started to develop a groundwater classification and management system. Because of the clear hydrological connection to our surface waters, which are subject to Federal jurisdiction, we feel that some Federal action in this area is appropriate and would be very useful to Maine.

The most important Federal requirement should be to establish an anti-degradation baseline of protection for groundwater quality. This could be similar to that used in surface water quality as long as it is clear that the existing quality of groundwater cannot be reduced.

With regards to financial assistance, at this point the State is in the best position to fill out the details of this groundwater program. We do feel, however, that Federal financing and assistance is warranted. Much of the State's effort is to respond to federally mandated and regulated programs, including the Resource Conservation and Recovery Act. While the Federal Government has mandated extensive regulation of solid waste disposal and underground tanks, it has not sent along the dollars necessary to implement these efforts.

I should stress that we are not simply seeking dollars to run enforcement programs. We understand that such Federal assistance should be tied to some basic set of minimum requirements to ensure consistency. However, we would encourage you not to adopt a full-blown regulatory program at this time. We feel that there is still much to be learned about the site-specific requirements of groundwater management.

We need to retain a substantial degree of State flexibility at this point in the process. Specifically, we need help in developing our basic understanding of the resource—mapping of all aquifers, groundwater research, and related activities. Strengthening the State assistance program of the U.S. Geologic Survey could help in this area.

We also need assistance in developing preventive measures. This will require the classification scheme mentioned above. It will also require local groundwater protection planning, the development of new land use ordinances, and other tools that are tailored to maintain the quality of groundwater that we already have.

In short, we need a partnership with the Federal Government and the financial resources that allow us to look to the future of the resource. We appreciate the assistance from programs like the Superfund, but those are essentially remedial and reactive. We would like to prepare for the future challenges to groundwater quality.

Thank you very much for this opportunity to testify.

Senator Mitchell. Thank you.

I've spent some time on the problem of interstate transport of solid waste and I am familiar with that being a problem, particularly in the southern part of the State.

Was your committee able to develop any data on what kind of waste is involved, and where in Maine is the waste being taken to? Do you have information on that general subject matter?

Senator USHER. We have a little information. I wish we would have had more time, but it was one of the most concerned issues as we traveled in other States and different legislative functions. Even in talking with other legislators they were saying, "We are sending waste up there," and I'm talking about legislators from New Jersey and from all the New England States, the Atlantic—I believe we even heard that we were receiving waste from the Pennsylvania area. It was a great concern of the committee that waste was coming in. The truckloads on a daily basis were being watched by different people, watching the license plates. It was just a great concern, knowing that we only had two licensed landfills in the State, and they were both in northern Maine—this is the central part; one is in Norridgewock and one is in Bangor.

So it was a great concern. We were aware of the other States putting veto power, namely Massachusetts, and there was a lot of demolition debris brought into the State. It was a very concerned issue, but we didn't have time. We started the hearing at the latter part of last summer; it was one of the longest study committees that I have been involved in in my 13 years in the State House, and participation was by many concerned people. We had many groups that played a very important part in this legislation. I predict in the future legislative years—next year, possibly—we will be finetuning this piece of legislation.

Senator MITCHELL. I'm going to ask our staff to get as much of that information as possible. That is a subject that has been of great interest to me, naturally, as a citizen. I come home every weekend and I read the papers and I know of how much concern there is throughout the State. I don't know if it is an appropriate area for special action, but it is at the very least a subject that we ought to look at and at least try to understand the dimensions of the problem.

Thank you very much, Senator Usher.

Mr. Walker?

STATEMENT OF JOHN WALKER, EXECUTIVE DIRECTOR, LOCAL COUNCIL OF GOVERNMENTS, AND PRESIDENT, ASSOCIATION OF REGIONAL PLANNING COMMISSION DIRECTORS

Mr. WALKER. I am very pleased to testify on behalf of the Maine Association of Regional Councils and also the local governments we

serve. Regional Councils including the greater Portland Council of Governments, are designated by the Federal and State governments to be the formal mechanism for intergovernmental planning and development activities among the State and local governments.

Though the Federal Government under the present Administration has withdrawn considerable financial support from this intergovernmental concept, and State authorities have been slow to provide support, the Regional Council system remains a promising mechanism in Maine and in the Nation to achieve environmental management priorities. We do feel groundwater is an essential priority to be dealt with.

It is our feeling that if the Nation is to sustain a meaningful groundwater resource, it must recognize how this resource is threatened and how it can best be protected Almost paradoxically, the answer to both questions is local land use practices. If local land use practices are good, the supply will be protected. If they are inadequate or even irresponsible, then the supply will be in danger.

While it is important to address specific sources of degradation, such as underground oil tanks, we think it is more important to address local government's capacity to identify threats to the source and to manage these threats by effective ongoing planning and public education and resource management programs.

We hope a thoughtful, comprehensive land use and water supply maintenance program for the local level will be implemented across the country, with the support of an aggressive Federal initiative for groundwater. I believe the local leaders of Maine and the Regional Councils of this State are prepared to carry out such a strategy if given the opportunity to do so.

This opportunity could present itself in two ways. First, financial resources must exist to ensure that a meaningful groundwater program based on capacity-building at the local level could be carried out over a several-year time frame. Second, and more important, perhaps, than the first, is that the national policy should require States to build that local capacity primarily through local planning and policy organizations. Water Quality Bureaus and the State Capitol should play a role in monitoring and research, but cannot work well at the local level where the development pressures are.

We urge that your groundwater policies emulate or build upon two successful Federal programs that support local capacity-building and responsible action at the local level while ensuring that State and Federal priorities are met. Those are the Clean Water Act, EPA 208 Water Quality Program, and the related Sewer Grants Program, and the Federal Highway Administration's Metropolitan Planning Process. Both programs achieve the Federal objectives, strengthen the intergovernmental process, and build sustained commitment and momentum at the local level for the national goals set by you and the other leaders of Congress.

I think you are well aware of the success of these programs. I testified before the Westbrook City Council the other night about their dues to our Council of Governments. Before the meeting began, one of the councilors came in and bragged about pulling two or three trout out of the Presumpscot River. Having been in that region many years, Senator, you recognize that's a tremendous suc-

cess story to be able to talk about pulling any fish out of that river compared to 15 years ago, before the 208 Program went in. And I think you have similiar success stories across the Nation where local, State and Federal Government work together to clean up surface waters, and I think a similar strategy can be done with the groundwater program.

The concept we present is that any new national groundwater program should evolve from the Clean Water Act, building upon the tenets of that landmark initiative. We don't feel separate legislation is needed if the powers of the Clean Water Act and the administrative protocols between the Federal, State and local governments are in place already and kept in force. You can build from that legislation, build onto that legislation.

This would also include the recent mandate that you supported in Congress in 1986, that local governments have a say in water quality planning through the Section 205(j) language, which we supported.

In initiating a concentrated effort for groundwater, we urge you to refine the protocols and responsibilities among the three levels of government, more in line with the FHWA planning process. The significant difference, similar to the 208 days, is the submission of a local planning and project prioritization process. Presently, EPA and Maine's Department of Environmental Protection do not support local planning and project identification in a systematic manner though every Regional Council in the State of Maine has a regional water quality advisory committee in place, prepared to recommend and pursue water quality management initiatives. The FHWA process places primary management responsibility in the local arena, engendering practical, issue-specific and appropriate remedies to the infrastructure needs of the region.

In the Clean Water Act, the process could begin at the grass roots level, with local priorities bubbling up to the Federal level based upon the Federal guidelines. The money doesn't start flowing until that local plan is in place, local references of the exact problems facing communities and their groundwater resources are supplied to the Federal Government, with the assistance of the State bureaus. Our local governments and the State Department of Transportation work very closely with Federal officials, but the onus is on local officials to demonstrate where they're going first, and I think that is a very good way of doing it. It helps engender practical, issue-specific and appropriate remedies to the infrastructure needs for highways, and I think it will do the same thing for groundwater.

The respective roles we envision would be the Federal Government establishing uniform national standards, short-term and long-term goals and evaluation procedures, and a resultant policy based on those goals; that the Federal Government manage the intergovernmental planning and investment process to ensure that annual and long-term goals are met and plans and projects are adjusted and coordination is achieved; that the Federal Government finance rudimentary local and State planning and management efforts to ensure a uniform level of minimum delivery across the Nation—this is an equity issue; provide capital funds to each State and region based upon a priority system to build capacity or to imple-

ment innovative management programs; fund research and demonstration grants to enhance groundwater through technology breakthroughs and innovative local and State initiatives; and, possibly through a Superfund-type of pool, assist in the costly task of mitigation and reclamation of groundwater sources that have already been damaged.

The State government, we feel, should help establish State priorities. Maine is unique compared to other States. We do have a different geology, different kinds of land use pressures. Given the Federal guidelines, the State government would help facilitate local efforts to fulfill the planning process and promote development of a State and local network for data management and help build the data base.

The State could also be the pass-through agency for the Federal funds, given the protocols established in the intergovernmental legislation, and assist in building capacity at the local level for those regions requiring such capacity-building assistance. The States also, I think, should complement Federal financing with State resources, especially with the bonding powers for major capital issues.

Local governments would be responsible for participation in the development of State and Federal priorities and the protocols and attainment measures; perform annual needs assessments and develop project priorities for submission to the State and EPA; and be responsible for developing local regulations and management procedures to protect the groundwater resources through ordinances, zoning, operation of utilities, and various land use management measures.

The local governments would also manage an ongoing resource protection process based upon national guidelines and channel local, State and Federal investment to local projects based upon annual contracts and work plans agreed to in the intergovernmental process.

Municipalities would also be responsible for developing municipal projects for resources across municipal boundaries, such as creating an intermunicipal resource protection district. They should financially contribute to the locally adopted groundwater program through investment in planning and regulatory staff, technology, cash match for State and Federal funds, and take advantage of their local bonding capacity powers. They also have and will collect user fees at the local level, so they can contribute there.

In conclusion, I think that the State has demonstrated over the years how local leaders are prepared to pursue progressive policies and programs to meet national environmental goals, but their support and effectiveness will come only if Federal policy supports their role and participation and if there are reasonable financial resources and incentives to accompany the national programs. Groundwater is a vital resource for Maine, and a coordinated approach to groundwater resource protection is needed. We recommend that any groundwater legislation evolve out of the Clean Water Act powers. We urge the intergovernmental process to be more similar to the effective one in the FHWA highway planning process. Both of these processes can be implemented in all regions of the country; not just in metropolitan areas, but in any rural

region. Any small metropolitan region can emulate those processes very easily.

Regional Councils are prepared to assist in this process. We have the staff, the technology, and interests available. We have the elected officials prepared to deal with this. The resources are very poor, however; we don't have recent data and we don't have the commitment of ongoing funds for environmental planning given the cutbacks in EPA funding over the years. We're holding our planning positions together with baling wire, in all honesty; it's not that we don't want to deal with these things, but the resources are needed.

I present one exhibit that talks about this resource need—this is the map of an aquifer in the New Gloucester area, Gray and New Gloucester, and this is the New Gloucester land use pattern here from the State map. The maps deal with data base and technology deficiencies. This is where the aquifer is predicted by the State and Federal maps, the present geological data source. Our planners worked with the DEP at the State to receive a grant for geologists to refine this map further, and these are the new more accurate boundaries of that aquifer based upon a local geological study. Our planners then worked with the towns' officials of New Gloucester and Gray—this aquifer crosses municipal boundaries—and they are now working on a joint resource protection district. This study was originally supposed to be a $100,000 study; they had to cut it back because of limited funds to a $10,000 study. The accuracy is much better than the State map. This is just two communities in Cumberland County. You can see the difference between where the aquifer was, clearly stated, and land use policies affecting property owners which were developed based upon more accurate data. This is a case of getting resources down to the local level. These tools can help local leaders to improve that resource. They could have sited an industrial park right here; they could have sited other things right here, not knowing that the aquifer was that extensive.

Senator MITCHELL. When you said, "right here," you pointed to an area of the map that is outside the area originally estimated to be the location of the aquifer in the State study, but inside the area that the more detailed local study showed?

Mr. WALKER. Right. It points up Mr. Marriott's point of the need for more data. But also, with the local tools, local officials were prepared to protect that resource. The better the tools, the better the information and the more progressive local policy is.

Senator MITCHELL. Did you say you found the intergovernmental planning aspect of the Clean Water Act better than those under the Highway Act?

Mr. WALKER. No, I said that I thought the old 208 process was very effective. But once 208 is winding down—the belief that the sewer program and surface water is pretty strong—the commitment to local involvement has been on the wane, and we're not getting very good cooperation in the past three or four years from the State; where instead, in the Federal Highway program, there has been a commitment for the past 15 years through this process, and the State mandates that the local governments have to decide the investment priorities for highways, they have to have a local match, they have to prioritize among themselves before State and

Federal funds come in. And it's been a partnership for the past 15 years, and I think you've had the highest and best use of tax dollars with a very strategic plan for highway investment. An excellent process.

Senator MITCHELL. Do you support the classification system that the State is now attempting to develop?

Mr. WALKER. Regional Council leaders and municipal leaders sit on that committee, and have worked on it, so we are supporting the process.

Senator MITCHELL. Would that work in the Portland area?

Mr. WALKER. Yes, I think it would, the classification process.

Senator MITCHELL. Thank you very much, Mr. Walker.

Mr. WALKER. Thank you.

Mr. Lander.

STATEMENT OF PHILIP LANDER, CHAIRMAN, ENVIRONMENTAL COMMITTEE, ASSOCIATED GENERAL CONTRACTORS OF MAINE

Mr. LANDER. Good morning, sir. I am an engineer with the H. E. Sargent company in Stillwater, Maine. We deal with earth moving and heavy construction. I am also the Chairman of the Environmental Committee of Associated General Contractors of Maine. My testimony will be for the contractors of the State of Maine; this is our general view of this.

We believe that in Maine, there is not currently a problem with groundwater contamination. However, we do see isolated areas where there are serious problems. The major concerns that we have are leaking fuel tanks, plumes created by salt/sand piles, agricultural chemicals, disposal of agricultural chemical containers, industrial waste disposal, and municipal waste disposal.

The State of Maine has a comprehensive program to address fuel storage, which has included licensing of existing—as well as proposed—storage facilities. The State also has a program for salt and sand piles, and the State has developed guidelines for siting new waste disposal facilities, as well as designing such facilities.

We believe that perhaps national guidelines should be set for licensing of fuel and gasoline storage, and also on a national basis relative to waste disposal facilities, but that the State should have control of these facilities. The State is really the appropriate one for specific programs, such as salt and sand piles.

Groundwater is a valuable resource and one that is very difficult to clean up. National groundwater protection legislation should be established. This is necessary to address groundwater contamination problems which may cross State lines. Congress should consider comprehensive national legislation similar to the Clean Water Act to address a wide range of groundwater contamination sources and waste disposal activities. These guidelines should be consistent from State to State.

This legislation should also include the development of groundwater resources, particularly with relation to depletion of groundwater resources.

We believe that Federal goals should be, one, prevention of further groundwater contamination; and second, cleanup of existing groundwater contamination. Industry—and in particular, the con-

struction industry—should be involved to provide input to developing guidelines and rules for both storage and disposal of potentially hazardous waste. Research should not stifle the economy or further economic growth, and in turn inhibit our ability to clean up existing problems. In order for economic activities currently underway to continue, we believe that interim regulations should be put in place expeditiously. This would allow storage and incineration of such things as the incinerator ash from existing incinerators while long-term solutions are researched and developed. For example, there are three municipal incinerators in the State. One is in the start-up phase in Biddeford, Maine. Two others—one in Portland and one in Orrington—will be starting up later this fall. These facilities will be handling waste from approximately 70 percent of all of Maine's towns.

The short-term solution must be immediately addressed, as well as the long-term solution.

Senator MITCHELL. Could you tell us the number of towns? Do you have any idea, in terms of percentage of population, as to how much they'll be handling?

Mr. LANDER. Sir, I don't.

Senator MITCHELL. Would you see if you could find that out?

Mr. LANDER. Yes, sir.

Senator MITCHELL. I'd be interested in knowing that.

[The information requested follows:]

ASSOCIATED GENERAL CONTRACTORS OF MAINE, INC.

101 Bennoch Road
Stillwater, ME 04489

7 August 1987

Mr. George Mitchell
United States Senate
Chairman
Subcommittee on Environmental Protection
Washington, D. C. 20510-6175

Dear Senator Mitchell:

I testified to you on Thursday, July 2, 1987 with regards to the ground water polution problems in Maine. We stated that contamination of the ground water was not currently a problem in the state. Isolated areas do exist but we felt that the state had comprehensive programs to handle these problems such as leaking fuel tanks, salt sand piles, etc.

During my testimony I drew attention to the fact that 70% of all towns in the state would be supplying trash to three incinerators which are located in Maine.

You questioned me on my 70% figure as to population or actual municipalities. I was not sure and assured you that I would research your question and reply.

Enclosed is a copy of a letter to you from Catherine A. Lee representating Bernstein Shur Sawyer & Nelson. She has given a detailed report on your posed question to me.

In continuance of my testimony I would also like to add that another construction industry activity that interfaces with ground water is the extraction of sand and gravel materials from below water tables in aquifers. Of course, granular materials have for years been removed from above water in aquifer areas. However, because of the increasing scarcity of materials above water, underwater resources have been used increasingly over the past couple of decades in many areas of Maine. This source of materials will become vitally important to our industry over the coming years.

In addition to our previous concerns we add that your committee consider legislation that would not have a detrimental impact on the sand and gravel mining industry by restricting the use of this vital natural resource.

Mr. George Mitchell
United States Senate
Page two.

Thank you for this opportunity to address you and your committee on such an important national problem and concern.

Respectively Submitted,

Philip A. Lander
Chairman
Associated General Contractors
Environmental Committee

PAL:cd

BERNSTEIN, SHUR, SAWYER AND NELSON
COUNSELORS AT LAW
A Professional Corporation
One Monument Square
P.O. Box 9729
Portland, Maine 04104-5029
(207) 774-1200
Telecopier 774-1127
Telecommunications 761-2974

Kennebunk Office
Post Road Corner
Kennebunk, Maine 04043
207-985-7152

Augusta Office
2 Central Plaza
Augusta, Maine 04330
207-623-1596

Barnett I. Shur
Louis Bernstein
Sumner T. Bernstein
Herbert H. Sawyer
Leonard M. Nelson
William W. Willard
Gregory A. Tselikis
F. Paul Frisoli
Peter J. Rubin
Alan R. Adams
Richard P. LeBlanc
Eric F. Saunders
Gordon C. Ayer

Gordon F. Grimes
Philip H. Gleason
Geoffrey H. Hole
James H. Young II
Mary L. Schendel
John M.R. Paterson
Linda A. Monaca
Charles E. Miller
Craig W. Friedrich
Lee K. Bragg
~~Andrew J. Bernstein~~
Christopher L. Vanvoris
Joyce A. Wheeler

Nathan H. Smith
Jeffrey T. Shedd
Janet E. Martinez
Peter A. Fredricks
James A. Houle
~~Steven J. McCarthy~~
Catherine A. Lee
Durward W. Parkinson
John L. Carpenter
Patrick J. Scully
Brennon B. Miller
Anthony E. Perkins
~~Catherine O'Connor~~

Edward J. Kane
Rosa A. Hugo-Vidal
Eric J. Gouvin
Maurice A. Selinger III
Diane S. Lukac
Kathleen M. Gilligan
Karen M. Burke
Nelson A. Toner*
Dwight A. Howes

* Admitted Massachusetts only

Israel Bernstein (1896-1967)

July 29, 1987

George J. Mitchell, U.S. Senator
176 Russell Senate Building
Washington, DC 20510

Dear George:

On Thursday, July 22, 1987 during the course of the ground-water hearings you conducted in Augusta, you posed the question to one of the people testifying, what percentage of the State's population will rely on the new waste to energy plants for disposal of their municipal solid waste. The person testifying was unable to provide that information and I subsequently offered to do so.

Approximately 72% of the State's population (including summer population for the towns under contract with MERC only) and 65% of the State's population (disregarding summer populations) will be served by the 3 waste to energy plants (MERC, PERC, RWS) currently under construction.

Let me explain the assumptions made in arriving at these figures. The Maine Energy Recovery Company (MERC) in Biddeford, Maine currently has 27 municipalities under contract. Relying on 1987 population figures produced by the State Planning Office, those 27 towns have a total of 185,604 inhabitants. Based on estimates provided by the Southern Maine Regional Planning Commission, the plant will service approximately 86,000 more people in those 27 towns in the summertime.

In addition to the numbers listed above, MERC will accept waste from three private haulers who will be hauling municipal solid waste primarily from within the State of Maine. I don't know precisely which municipalities that waste will come from on an ongoing basis, however, those three haulers will be responsible for delivering a total of 35,800 tons of waste per year at

MERC. A standard calculation used for computing waste generation assumes that each person generates .32 tons of municipal solid waste per year. Another standard calculation assumes that 56% of the total waste stream of a municipality is made up of residential solid waste (the balance is attributable to industrial and commercial waste). If 56% of the total 35,800 tons is residential waste, then a total of 20,048 tons of residential waste will be hauled by the three private haulers from municipalities within the State to MERC. Dividing the 20,048 tons by .32 tons (the quantity of waste generated per person per year), approximately, an additional 62,650 people within the State of Maine will be served by MERC.

In sum, the fixed number of 185,604 persons (approximately 16% of the State's population) will be served through contracts between their 27 towns and MERC. An additional 85,904 (7%) of summer residents will be served. An additional approximately 62,650 persons will be served (5%) through the three private haulers. The total, approximately 28% of the State's population, will be served by MERC. This percentage drops to 21% if summer residents are excluded.

Approximately 300,000 persons (27% of the State's population) will be served by the Penobscot Energy Recovery Facility in Orrington, Maine. I have no information on increases due to summer inhabitants served by the PERC facility. I have been informed by counsel to the Regional Waste Systems Facility under construction in the Portland area that approximately 200,000 persons (17%) will be served by their plant. This does not take into account any summer increases in the towns under contract with MERC.

If I can be of any additional assistance, please don't hesitate to call on me.

Sincerely,

Catherine A. Lee

Catherine A. Lee

365.222
99999405.003

cc: Nicholas S. Nadzo, Esq.
David Katon (MERC)
Hadley Jordon (PERC)

Mr. LANDER. The short-term solution must be immediately addressed, as well as the long-term solution that the proposed legislation would deal with. Our problem is "now" first, and "long-term" second.

We believe it appropriate to have Federal funding for administration and funding on a local level by the State. This would require general guidelines on the Federal level which would have to be followed by the individual States. The Federal Government is in the best position to provide grant assistance for research at our universities. Developing a background of natural quality of groundwater should be on a regional or State basis, though.

In conclusion we, the contractors of the State of Maine, perceive groundwater contamination as a serious, long-term problem which requires a commitment on both the Federal and State level to be manageable in the future. Federal funding and grant assistance for research will be necessary, and in the cleanup. We believe it important that industry—and in particular, the construction industry—be included in providing input for developing guidelines for future waste disposal and storage of hazardous materials, as well as cleanup of existing problems.

Cleanup of existing problems should be ongoing, but must be prioritized so that the most severe problems are dealt with first. Developing prevention plans based on our current and expanded technical ability will likely provide solutions for current, as well as future, problems.

Thank you for this opportunity.

Senator MITCHELL. Thank you very much, Mr. Lander, and thanks to your Association for participating here today.

Thank you, gentlemen, very much.

Our next panel is Mr. Barry S. Timson, Mayor of the City of Hallowell, representing the Maine Municipal Association; Mr. Michael Cline, Director of Research and Policy Analysis, Maine Audubon Society; and Ms. Patricia Aho, attorney with the Maine Chamber of Commerce.

Welcome, gentlemen and Ms. Aho. We look forward to your testimony.

You may go ahead, Mr. Timson.

STATEMENT OF BARRY TIMSON, MAYOR OF HALLOWELL, MAINE, REPRESENTING THE MAINE MUNICIPAL ASSOCIATION

Mr. TIMSON. Thank you, Mr. Chairman. As you know, I'm here representing the Maine Municipal Association. In developing my testimony we had a meeting several weeks ago at which we invited municipal officials from three or four municipalities now experiencing groundwater problems to receive their views on this issue, and I hope that we represent a number of Maine municipalities in presenting this to you.

Back in 1979 a study was done, and it was estimated that 50 percent of Maine's population relies on groundwater sources for potable water. It was then estimated that by the year 2020, there would be an 8 percent increase in groundwater use by municipal systems, and a 43 percent increase by individual wells. My community of Hallowell at the present time is now looking at diverting from a

surface water supply to a groundwater supply because of stricter EPA limitations on surface water supplies. So I believe this 8 percent increase is probably a very low estimate, and the amount of groundwater supplies which will be used in the next 30 years will increase by a far greater amount than 8 percent. Groundwater certainly is an important resource to Maine citizens and will become an ever more important resource. That is why the Maine Municipal Association and Maine municipalities believe that a Federal groundwater program is paramount and absolutely needed.

We believe that groundwater contamination within the State of Maine and the remainder of the country is an increasing and very serious problem. Documented sources of groundwater contamination within the State of Maine include leaking underground fuel and chemical storage tanks; salt water contamination from municipal and State salt and sand piles; salt water intrusion along coastal areas; past uncontrolled and unregulated midnight dumping of toxic chemicals; pesticide residual contamination; leachate contamination from sanitary landfills; nitrate-nitrogen and bacteria contamination of individual wells from subsurface sewage septic systems, and radon contamination.

In all of the above cases, we do not believe that the extent of groundwater contamination from each of the above sources is known. We know that they are probably more prevalent than the known cases, and simple probability statistics assure us that groundwater contamination problems documented in such communities as Hope, Friendship and Waterboro represent only the surface tip of the iceberg. What we cannot see today cannot be prevented. Without a doubt, many Maine citizens are unknowingly now drinking water from dug and drilled wells which do not meet Federal or Maine drinking water standards.

The State of Maine has developed a number of programs to identify and respond to groundwater pollution problems over the past five years. Of particular help to municipalities have been programs which have located and identified surface and sand and gravel aquifers within community boundaries, appropriated State monies for assistance in closing landfills and covering municipal salt piles, provided technical assistance to local planning boards in assessing the impact of particular developments on groundwater quality and quantity, and adopted hazardous waste and underground fuel tank registration regulations. I believe that there are other programs which speakers before me have indicated to you.

All of the above programs attest to a State commitment to clean groundwater and have been welcomed by municipalities. However, the municipalities can also find criticism of some of those programs, particularly in the area of hazardous materials, hazardous waste contamination, investigations and mitigations.

Those municipalities who have identified hazardous and petroleum contamination problems continue to complain that cleanup efforts are too slow; dissemination of health risk information is withheld for fear of creating unwarranted local reaction; and municipalities are not afforded any control over development of alternative water supplies or acquisition of third-party professional technical assistance to advise communities of feasible alternatives to the cleanup efforts. The slowness of cleanup and health risk identifica-

tion of known groundwater contamination situations has created a distrust of State and Federal cleanup programs which appear to focus on blame assessment. health risk cost benefit determinations, and time-consuming technical assessments of proper cleanup scenarios rather than concentrating on the immediate need to reduce public health risks and provide alternative potable ground or surface water supplies. Simply put, Maine communities with known serious groundwater contamination problems view existing State and Federal cleanup efforts as being too bureaucratic. They view State-sponsored cleanup programs as woefully underfunded, technically mismanaged, and too secretive; yet, although municipal officials are those officials directly responsible for public health and welfare of their neighbors, local officials have no immediate resources to assist their constituents when the emergency need arises.

Some of the Maine groundwater programs which might be included in Federal legislation include groundwater aquifer identification, mapping and classification; underground hazardous waste storage siting and identification; groundwater protection education, and expansion of the groundwater contamination cleanup programs.

Since groundwater and clean potable water is an essential human need, there is no doubt that there is a necessary and current need for Congress to develop and implement national groundwater protection legislation. The Clean Water Act is a comprehensive Federal program to protect and clean up our Nation's surface water supplies. Maine municipalities have been very supportive of this Federal program and have been able to see its effectiveness and success in cleaning up Maine's streams and rivers. Congress should consider a comprehensive Federal legislative program to protect and clean up the Nation's groundwater supplies.

The goals for Federal groundwater legislation should be both preventive and to clean up existing groundwater contamination. Both areas are of significance, primarily from a financial standpoint. Since cleanup and providing alternative sources of clean water costs are so high, Federal involvement is essential to adequately fund cleanup efforts. Further, in order to prevent further costly mitigation, protection regulations are paramount to a successful legislative strategy.

The responsibility for groundwater programs should be tripartite: Federal Government, State government, and local government. Again, I would point to the Clean Water Act as an example of Federal legislation and an enforcement program which has worked at all three levels. While the Clean Water Act places the primary responsibility at the Federal level, it is implemented at both the State and local levels. The Clean Water Act is primarily successful because it is conducted and implemented by all three levels of government, receiving wide support from the citizenry because of its importance and visibility at the local level.

Maine municipalities seek three appropriate levels for groundwater legislation and protection activities. The Federal Government should be responsible for nationwide research, risk assessment of health effects, developing rapid and accurate cleanup techniques, and providing grant programs. State governments should

be responsible for developing groundwater programs which are prioritized to the region's specific groundwater uses, geology and contamination programs. Local government should be responsible for developing and supplying immediate clean water sources for those citizens whose water supplies have been contaminated or are suspected of being contaminated. I stress this on the basis of the experience of Maine municipalities which are impacted now by groundwater contamination problems. My own experience is as mayor of a community which recently was declared an emergency area during a flood.

Developing alternative water supplies must be done quickly and without regard to relative health risk assessment comparisons of a given problem from one municipality to another. Funding for such a local program must come from the Federal Government because small communities lack immediate access to capital. A program such as local disaster loan assistance should be made available for creating emergency alternative clean water supplies.

Finally, existing groundwater programs conducted by the State of Maine require additional funding above and beyond the capability of the State. Comprehensive Federal groundwater legislation should include funding grants to the State of Maine to continue the existing programs at appropriate levels.

Thank you very much.

Senator MITCHELL. On the question of developing alternative water supplies when contamination is critical, do you suggest that there be a program to provide for anyone whose drinking water has been contaminated, or would you limit it to public drinking water supplies?

Mr. TIMSON. In the State of Maine we have groundwater contamination problems that affect rural communities where the individuals get them from either dug or drilled wells. Communities of a rural nature, such as Hope or Waterboro, without municipal water supplies, feel the immediate pressure to help their individual neighbors or groups of neighbors whose wells are contaminated. And the problem has been that in many instances, because 10 individual wells are contaminated, that a contamination problem which affects 100 or 1,000 citizens is deemed more necessary to receive technical efforts and cleanup than a community with 10 wells. However, the municipal officials receive calls from those 10 individuals, saying, "Is not my health just as important as somebody else's?" And obviously, this is true.

So I think the problem with the existing programs is that they delay too long the provision for finding an alternative water source. And indeed, that has been the experience of Maine municipalities. I believe that if somebody finds that their well is contaminated by a common source problem, that municipalities should be allowed and funded to provide an immediate water supply of clean water, the best available way of doing that. I think communities can do that if they plan ahead for it and receive appropriate monies in order to fund the alternative supply.

Senator MITCHELL. Thank you very much.

Mr. Cline?

STATEMENT OF MICHAEL CLINE, DIRECTOR OF RESEARCH AND POLICY ANALYSIS, MAINE AUDUBON SOCIETY

Mr. CLINE. Thank you, Senator Mitchell, for the opportunity here. I am the Director of Research and Policy Analysis with Maine Audubon Society. My expertise is in forest biology, in which I hold advanced degrees and eight years' experience, and I will present the position of the Maine Audubon Society with regard to groundwater protection.

The images Maine engenders for most people are spectacular natural resources with its tall, stately white pines, forests, and scenic, rugged coastline. However, one of Maine's most precious and fragile natural resources is not visible. Groundwater supplies are the drinking water for more than half the State's population, and it's the only source of drinking water for most rural residents. As such, the future health of all of Maine's people and economy is greatly dependent on clean and abundant supplies of groundwater.

Maine began to take action in the role of groundwater with the Groundwater Protection Act of 1979 that classified the State's groundwater as GWA, suitable for public water supplies, or GWB, suitable for all other uses except public water supplies. Unfortunately, this classification system appears to be too general and has proven to be of little use. The State needs a tiered groundwater classification system with specificity to land use. It may be improving on some of our State programs, such as Connecticut, Massachusetts or Vermont. However, such a classification system should not sanction waste discharge to groundwater. Groundwater should have the same consideration given to surface water. Just as surface water must be "fishable and swimmable," with no discharge lowering that quality below that standard, groundwater needs equally tough and specific standards.

The Maine State government has adopted several pieces of legislation which are excellent in purpose. The 1981 amendments to the Site Location and Development Law added new standards for locating solid waste disposals and landfills away from aquifer recharge areas. The State also charged the Maine Geologic Survey with the mapping of sand and gravel aquifers and bedrock aquifers throughout the State. These two mapping programs are augmented by the Well Drillers' Information Act of 1987 which will compile information on water table depth and overburden from drilling contractors. These information gathering programs are vitally important to the implementation of groundwater protection programs, but they have not received the financial support they deserve. The sand and gravel aquifer program funding has been cut by two-thirds, I believe, and the bedrock program was eliminated.

Effective groundwater protection programs must be developed at the local level, but require information and knowledge of how to manage the groundwater resource. Towns must know the locations and the vulnerability of aquifers and incorporate these considerations into the planning process. Given adequate information, towns can develop groundwater protection programs tailored to their own particular circumstances, maintaining the day-to-day presence.

Utilizing the previously-mentioned mapping program, the State proposes to construct maps for towns to use in managing their groundwater resource. The maps would include town property boundaries, transportation routes, aquifer boundaries, groundwater vulnerability, well thickness, potential threat locations, depths to water table, thickness of overburden, and direction of flow. This is exactly the type of program that is needed at the local level; however, to manage a data base such as this will require a geographic information system, a GIS. The request for a GIS was eliminated from the 1987 budget.

In contrast to past efforts, which have concentrated on cleanup, a national groundwater program should provide a framework for prevention of contamination. This program should develop a schedule for acquiring necessary, basic groundwater information, which I mentioned before as being vitally important to States and communities planning protection programs. It should also facilitate the implementation of this within areas. The program should also focus on reducing reliance on hazardous chemicals.

Compliance should be a cooperative responsibility, structured such that the Federal Government would take over efforts in noncompliance States.

Incentives were the catalysts which drove the Clean Air and Clean Water Acts, and would enable States to more quickly implement the new program. These incentives might include Federal matching funds for general implementation, as well as incentives for specific targeted tasks. In the latter case, this might include returning a portion of gasoline excise taxes to States actively removing leaking and abandoned fuel storage tanks and cleaning up resultant pollution.

Although specific action to protect and improve groundwater quality will need to be implemented on the local level, a mandate at the Federal level is needed. This is a key element of Federal environmental legislation that is clearly lacking. Clean groundwater should be on equal par with clean air and clean water legislation. A comprehensive national groundwater protection plan should be implemented by a central administrative body, coordinating Federal classification, monitoring, compliance, and cleanup programs. At present, this responsibility is fragmented among different agencies, with gaping holes and duplication of effort.

A national program should establish minimum standards for groundwater quality which would serve to coordinate the great diversity of State laws. However, under no circumstances should such standards be used to imply an acceptable level of groundwater pollution.

Federal support would focus attention on groundwater issues and enable States to acquire the funds necessary to cope responsibly with this issue. Groundwater protection must involve the local, State and Federal levels, with the Federal Government taking an active leading role. The actual implementation would be performed at the State and local level.

Thank you.

Senator MITCHELL. At your convenience, could you provide us in writing with specific recommendations on the classification system

that you referred to, with your recommendations as to what you think would be an appropriate classification scheme?

Mr. CLINE. Sure. I'd be glad to.

[The information requested follows:]

MAINE AUDUBON SOCIETY
Gilsland Farm • 118 U.S. Route One • Falmouth, Maine 04105 • 781-2330
The responsible voice for Maine's environment and natural resources.

July 14, 1987

Sen. George J. Mitchell
344 Russell Building
Washington, D.C. 20510

Dear Senator Mitchell:

Thank you for soliciting input from the Maine Audubon Society on potential national ground water policy. Per your request, I will outline major points which we feel are necessary in developing and implementing a comprehensive ground water classification system.

Although ground water is often mistakenly viewed to be less vulnerable to the activities of man than surface water, owing to its spatial relationship, it is equally susceptible and presents unique problems in protection and rehabilitation. Clean up is expotentially more difficult than prevention of ground water contamination. Therefore, ground water policy should prevent degradation and in no case permit degradation of ground water to a point unsuitable for human consumption. In addition, policy should establish levels of protection based on the vulnerability and value of the resource and require conservative protection measures in the absence of specific ground water information. Land use activity impacts, including cumulative impacts, should be restricted via prohibitions, performance standards, definition of discharge concentrations, and other appropriate measures. Finally, such a policy should ensure that contaminated ground water is contained and restored as soon as the technology is available.

Classification of ground water should be based upon vulnerability and value with the most strict performance standards, discharge limits, and prohibitions applying on land in areas above more valuable and vulnerable aquifers, and where aquifers connect with quality surface water. Ground water in the higher classes should meet toxicity limits for aquatic life in surface water and be suitable for human consumption. Activities that expose ground water to contamination risks (e.g. landfills) should be located in least vulnerable areas. However, this classification system should not sanction waste discharge to ground water. Therefore, potentially threatening landuse activities should be strictly controlled to prevent contamination.

Connecticut has one of the best state ground water classification systems and serves as good point of reference for the nation. The key to passing legislation in Connecticut was procuring information on ground water location, quality, and vulnerability. Mapping of ground water resources clarified the problems and reinforced the need for

ground water quality protection. Connecticut has a four-tier classification with the following components: (GAA) public water supplies requiring no treatment, (GA) private drinking water supplies requiring no treatment, (GB) potential water supplies with treatment, and (GC) uses other than water supply. Waste discharge permits are administered by the state and augmented by local land use planning and regulation. The unsettling aspect of this system is that GC water may be considered presently contaminated and acceptable for further waste discharges or siting of high risk land uses. The classification system should prevent the further deterioration of existing contaminated ground water. Guidelines for landuse should be determined from a number of site characteristics and not just ground water quality.

If you have further questions or wish to have certain points clarified, please call me.

Sincerely,

Michael L. Cline

Dr. Michael L. Cline
Director, Research
and Policy Analysis

MLC/ps

cc: Jeff Peterson

Senator MITCHELL. Thank you very much.
Ms. Aho, welcome.

STATEMENT OF PATRICIA AHO, ATTORNEY, MAINE CHAMBER OF COMMERCE AND INDUSTRY

Ms. AHO. Thank you, Senator Mitchell. I represent the Maine Chamber of Commerce and Industry this morning, and I am pleased to have the opportunity to address some of the issues surrounding groundwater management in Maine.

As testimony today exemplifies, groundwater is certainly an issue that concerns us all. Current threats to groundwater in the State, as you have already heard this morning, include such things as improperly sited and/or managed municipal and private landfills, as well as leaking underground storage tanks.

Recently, the Maine Department of Environmental Protection has estimated that there are 26,000 buried fuel storage tanks in Maine, of which it is estimated that 30 percent will leak before they can be replaced by acceptable facilities.

Landfills, as I said, also represent a problem to groundwater in Maine, and they also represent the current disposal option of choice. Right now it's estimated that 85 percent of the municipalities in Maine use solid waste facilities, either within their own community or through commercial landfills that are sited in Maine. Though it is expected that over the next five years the waste energy recovery facilities will become the primary disposal option, landfills will always remain a necessary option for solid waste management.

Because of these two specific threats that I have mentioned, Maine has acted quickly and decisively in these areas. Two years ago, Maine's underground storage law and accompanying regulations became a model for the rest of the country to follow. In the past two weeks, Maine has enacted a tough new comprehensive act on solid waste management and disposal.

Maine has taken other active steps, as you have already heard this morning, to protect its groundwater, including development of a groundwater classification project, coordination of groundwater programs, and a program of mapping significant aquifers, including recharge and discharge areas.

The State will continue to work on various programs and controls to protect groundwater. Groundwater is a resource which is of particular local concern. Clearly, in some situations, groundwater may cross jurisdictional boundaries; however, in most situations, an aquifer is of local concern.

The management plan that is developed must provide flexibility, allowing for the necessary trade-offs between absolute protection and activities which are essential to economic development. The management plan can and should recognize that not all groundwaters are of equal value, and that each aquifer will be particularly suited to certain uses. Therefore, a plan developed by Maine should be quite different from a plan developed by a different State.

Certain activities and decisions are most appropriately left at the local level—mapping programs, monitoring programs, priority and

decision-making programs, implementation and resource use. Other activities, we believe, are particularly well-suited for the Federal level, including health and risk assessments, research planning and development, and perhaps incentive programs such as grants.

I would also recommend that during your examination of groundwater protection and management issues, that you review two recent reports by the Environmental Protection Agency. The first is "EPA Activities Related to Sources of Groundwater Contamination," and the second is entitled, "A Survey of State Groundwater Protection Legislation," 1985. These reports highlight the number of laws and regulations, both State and Federal, which involve groundwater protection. MCCI believes that it may be necessary and appropriate to coordinate these various laws and regulations rather than to create another layer of regulation which may unintentionally detract from current programs, as others have already testified this morning.

I appreciate the opportunity to testify. Thank you.

Senator MITCHELL. I think your last point is a good one. One of the problems that now exists is that there is no single Federal law which has that objective, the protection of groundwater. What protection does exist is in laws that are intended for other purposes, but which provide some protection, such as the Safe Drinking Water Act, for example. But you have to be very careful, as you say, not to simply add another layer of regulation without doing something about rationalizing and coordinating the laws that do exist, so that if in fact legislation is necessary—as I believe it is in some form; we have not yet decided on the extent to which it should become involved, but if it is in some form—then we will have to make sure that we do not unwisely and unnecessarily increase the burden on those who are subject to the regulations, so that they can recognize that we're doing the minimum necessary under the circumstances.

I thank you very much, Ms. Aho, for your testimony.

That completes the testimony of the scheduled witnesses; I have a few minutes before I have to go to my next appointment. Is there any person here who would like to speak?

We'll get Senator Kany first. Welcome, Senator Kany; it's a pleasure, and we look forward to hearing from you.

STATEMENT OF HON. JUDY KANY, SENATOR, MAINE STATE LEGISLATURE

Senator KANY. Thank you, Senator Mitchell. I haven't seen you since yesterday. I want to tell you, Senator Mitchell, that I appreciate this opportunity. I had not planned to speak, but after listening to the testimony I did want to comment on a number of things.

Senator MITCHELL. I think that for the record, you might want to identify yourself.

Senator KANY. Yes. For the record, I am State Senator Judy Kany of Waterville, and I did present the Council of State Governments' testimony to your subcommittee prior to your chairing the subcommittee, on behalf of the 50 State governments. And at that time I mentioned something which I would like to reiterate. It was a suggestion that we do, indeed, look to the Low-Level Radioactive

Waste Policy Act as a pattern for hazardous waste and solid waste, in which perhaps regional compacts could be formed or individual States could make arrangements for disposal capacity and for management plans for their waste. And I still think that might be helpful. A number of people have spoken to the point that we do have a problem in dealing with out-of-State waste. Sometimes the lack of facilities can encourage illegal dumping of hazardous waste, as well as other types of waste. Perhaps a real management plan would help protect the groundwater in the long run.

During that testimony about two years ago, I believe, which was in response to EPA's groundwater strategy, a couple of things were mentioned. One was that the States really need help with some of the technical research. An example of that would be in learning about pesticides to help prevent groundwater contamination.

The second area that we are now dealing with in the State of Maine is a problem that we have with spreading of sludge that contains dioxin on agricultural lands, a practice which is very economical and which has occurred here. Yet, once it is contaminated with traces of dioxin which generally adhere to the particles—it is a problem potentially for groundwater contamination. And we really need the money and the technical assistance to deal with a major problem like that. So I just thought I'd mention those things.

Senator MITCHELL. Thank you very much.

Senator KANY. Just one other item, and that is that often surface and groundwater meet, particularly in a State like Maine. So when you're talking about surface water contamination, you're also talking about groundwater contamination and vice versa, so the two really cannot be separated the way they perhaps can in more arid areas.

There are two people that are here today that I really wish, if you do have the time, you would call forward. I don't know if they had planned to come forward. I think they can offer all kinds of valuable information. One is Walter Anderson, our State Geologist, who is here. He is also the Director of the Maine Geological Survey. The other is Paul Dutram, who serves as Executive Director for the Land and Water Resources Council. I do remember a publication of the Land & Water Resources Council about two years ago, which indicated that perhaps as much as 90 percent of our groundwater in Maine is actually contaminated. That is a very high figure, and you may want to pursue that. But perhaps Maine groundwater is not as clean as some people might believe.

Thank you very much for this opportunity. I appreciate it, and I want to thank you for the work that you're doing in radon, also. I was glad to hear that the problem of radon contamination of groundwater was brought up, since that is a problem that is not generally acknowledged.

Thank you very much.

Senator MITCHELL. Anyone else?

STATEMENT OF CATHY LEE, ESQ., ON BEHALF OF KTI HOLDINGS, MAINE ENERGY RECOVERY COMPANY, PORTLAND, ME

Ms. LEE. Good morning, Senator Mitchell. For the record, my name is Cathy Lee; I am with Bernstein, Shur, Sawyer & Nelson in

Portland, and I am here on behalf of KTI Holdings. KTI Holdings is the primary developer of the Maine Energy Recovery Company, the waste to energy plant about to begin commerical operation in Biddeford; the Penobscot Energy Recovery Company, which is the waste to energy plant under construction in Orrington, and PERC Environmental Resource Facility is the landfill which is in the permitting stages, which will take all of the ash and residue from those two plants.

I believe I can supply you with the information you requested on the percentage of Maine's population being served by the three waste energy plants. I don't have those numbers with me, but I'd be happy to get them to you. (See p. 20.)

I can tell you that we estimate that two-thirds of the State's municipal solid waste will go to MERC, PERC, and RWS, which is the Greater Portland Waste to Energy Plant. And I say "estimate" because, as Senator Usher mentioned, during the course of the Solid Waste study the Energy and Natural Resources Committee was putting together in preparation for recommending solid waste legislation, it became apparent that there were not reliable figures available. Many, many small towns in Maine don't weigh their waste now; it all goes to the dump, and they don't really know how much waste they generate. This fact has become apparent to us because many towns entered into contracts with the waste to energy plants to deliver the quantity of garbage they thought they would be generating, and now that it's getting closer to the start of commercial operations—probably less than a month in the case of MERC—some of those towns have come back and are saying, we've started to keep accurate waste generation figures for the last six or eight months, and we need to double or triple the amount of waste we intend to send to your facility. We expect in some cases it will be the reverse, but the point is that we really don't know. Once the three waste to energy plants come on line, we will have very reliable figures for how much the State's municipal solid waste is disposed of at those facilities. We expect it will be in the area of ⅔ of the total.

MERC will accept waste from over 30 towns in southern Maine for a 20-year period. PERC will take waste from over 70 towns in the greater Bangor area for 30 years, and RWS, I believe, will serve approximately 20 towns and, again, I believe for a 20-year period.

Senator MITCHELL. If it's 70 towns, it's got to be somewhat beyond the Bangor area, doesn't it?

Ms. LEE. Yes, it does extend—it goes—there are some towns in the county that are also going to PERC. There are some as far south and west as Naples. MERC is at full capacity and has been for a period of time, so towns that have no place to go have recently come to KTI and asked to enter into contracts with PERC, even though it's some hauling distance away.

Senator MITCHELL. Naples to Bangor?

Ms. LEE. Yes, Naples to somewhat north of Bangor, yes.

I won't repeat a lot of the comments that have been made here, many of which I support, but I will add that the State has developed programs for groundwater protection, but they're generally seriously underfunded. The new solid waste bill which Senator Usher mentioned focuses on cleaning up contaminated landfills,

but there isn't nearly enough money to do the job. The DEP has been forced over the years, given their limited resources, to allow polluting landfills to continue to operate because there haven't been solutions available. What they've done—and they've been very practical about it—is they've allowed towns to coordinate the closing schedules for their landfills with the opening of commercial operations of the waste to energy facilities. But that means in many cases that several years of continued contamination have to be tolerated. If additional money had been available, it is very likely that towns would have been better situated to come up with solutions earlier. And while a large percentage of the State's solid waste problem, I believe, is solved, there are still areas—Brunswick, Augusta, northern Aroostook, greater Lewiston—that have not yet developed solutions. So the need for additional waste disposal capacity continues to exist.

Senator MITCHELL. Is there sufficient waste to justify the existence of another facility in Maine?

Ms. LEE. I believe there is a need for probably one more facility to take care of remaining in-State need. If you take all of the waste from those areas I just mentioned, you can more than fill a MERC or a PERC or an RWS. So on that basis, I don't think there's any question there's going to be a need for either a very large landfill or, perhaps, several small landfills, or another waste to energy plant, or some combination.

Central Maine Power Company has put out a request for proposals for co-generation, and KTI is responding to that request with a proposal for a third waste to energy plant in the Lewiston area. All of these plants, as you know, generate electricity, which is the primary revenue stream.

In addition, I think there's a serious need for public education on the importance of responsible waste disposal. There still, despite Federal requirements, hasn't been a hazardous waste facility sited in Maine. There is a mechanism under the State law, but it hasn't been done. So all of the hazardous waste generated within the State must be sent, at tremendous cost, out of the State. Likewise, it's very difficult to site and develop a landfill, just a secure landfill. All of these waste to energy plants that are going to allow for the closing of municipal dumps that have been polluting groundwater rely on landfills for disposal of their ash and other by-products. It's imperative that people understand that landfills are a necessary part of solving the waste problem. There is often great public resistance even to the responsible development of disposal capacity. No one condones irresponsible development, but there is a need for responsible development.

Senator Usher did raise a serious point in saying that interstate cooperation is necessary. The fact that Massachusetts has a de facto policy of not licensing landfills puts a strain on the State of Maine. There is also a need for Maine to accept responsibility for its own waste. Many businesses and towns have to rely on out-of-State landfills right now. If a business requires an environmental license from the DEP, they are required to show that they can adequately dispose of their solid waste. If they can't get a contract with either of the two commercial landfills—and there are only two in the State—they have to go to New Hampshire or elsewhere

to find disposal capacity, and that's a tremendous strain on Maine's businesses.

All of that, to say that public education would be beneficial.

Other points I'll just touch on—I think there is a need for Federal health risk standards on contaminants such as dioxins. Responsible developers who want to comply with standards have great difficulty because they don't exist. There is a need for funding to study and develop new technologies for recycling, source reduction, and disposal; for technical assistance to towns, and for financial assistance for landfill closures.

Senator MITCHELL. Thank you very much.

Ms. LEE. And I will get you those figures.

Senator MITCHELL. I appreciate that.

Is there any other person who wishes to speak?

[No response.]

Senator MITCHELL. If not, then I'll conclude by thanking all who attended, those who testified and provided very valuable information. This is a serious problem. As we go forward, we are learning that there are enormous benefits that accrue to society in terms of the conveniences to which we have become accustomed, but they carry with them some cost and burden. And in this and other areas, we are somewhat behind in point of time in understanding, assessing, and dealing with those costs and burdens. We see that now, with respect to groundwater, as it directly affects the public health, or in terms of the drinking water supply, and in other respects.

This has been important and valuable in providing information to me to be shared with other members of the subcommittee as we assess this subject and attempt to fashion the most reasonable and responsible policy for dealing with this serious problem.

Thank you all very much. The hearing is concluded.

[Whereupon, at 12:05 p.m., the hearing was adjourned.]

[Statements submitted for the record follow:]

TESTIMONY OF DEAN C. MARRIOTT

COMMISSIONER, DEPARTMENT OF ENVIRONMENTAL PROTECTION

BEFORE THE SENATE SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION

JULY 2, 1987 - AUGUSTA, MAINE

SENATOR MITCHELL, MEMBERS OF THE SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION, FELLOW CITIZENS, I APPRECIATE THE OPPORTUNITY TO SHARE MY THOUGHTS ON FEDERAL/STATE ROLES IN GROUNDWATER PROTECTION HERE IN MAINE. IN THE SHORT PERIOD OF TIME I HAVE SPENT THUS FAR AS DEP COMMISSIONER AND CHAIRMAN OF THE GOVERNOR'S STANDING COMMITTEE ON GROUNDWATER; I HAVE BEEN EXPOSED TO A GREATER VARIETY AND INTENSITY OF GROUNDWATER PROBLEMS THAN I HAD PREVIOUSLY THOUGHT POSSIBLE AND I CAN ASSURE YOU FAR MORE THAN I WOULD LIKE. TO THOSE WHO WONDER WHERE THE GROUNDWATER PROBLEM IS IN MAINE - I CAN REPLY LIKE THE MAINER IN ONE OF MARSHALL DODGE'S SKITS: "DON'T YOU MOVE A INCH...YOU'RE STANDING ON IT!" THE GOOD NEWS IS THAT MOST OF MAINE'S GROUNDWATER IS UNCONTAMINATED AND WE ARE DETERMINED TO KEEP IT THAT WAY.

TODAY I WOULD LIKE TO TOUCH ON SOME OF THE MORE PROMINENT GROUNDWATER ISSUES FACING MAINERS AND OFFER SOME IDEAS ON HOW TO IMPROVE THE SITUATION. LEAKING UNDERGROUND PETROLEUM PRODUCT TANKS IS ONE OF THE TOP GROUND WATER POLLUTION PROBLEMS IN MAINE. IN THIS CASE, MAINE HAS NOT WAITED FOR THE FEDERAL GOVERNMENT TO COME ALONG WITH A PROGRAM TO DEAL WITH THESE TANKS. RATHER WE HAVE MOVED SWIFTLY TO ESTABLISH A MEANS OF CLEANING UP OR OTHERWISE LIMITING THE ENVIRONMENTAL AND PUBLIC HEALTH THREATS FROM UNDERGROUND TANKS. IN THE PAST YEAR MORE THAN 2,000 TANKS HAVE BEEN REMOVED STATEWIDE, AND OVER HALF OF THEM SHOWED EVIDENCE OF LEAKAGE. FORTUNATELY, IT APPEARS THAT THE NUMBER OF CONTAMINATED WELLS AS A RESULT OF LEAKING TANKS HAS PEAKED AND IS NOW BEGINNING TO DECLINE. WHILE THERE IS STILL A GREAT DEAL OF WORK TO BE DONE ON

UNDERGROUND TANKS; MAINE IS MUCH BETTER EQUIPPED TO DEAL WITH THESE PROBLEMS THAN WE WERE JUST A FEW YEARS AGO. WE HAVE A GOOD SET OF RULES AND STATUTES, AN EXPERIENCED AND HIGHLY PROFESSIONAL STAFF AND PERHAPS MOST IMPORTANTLY WE HAVE A MUCH BETTER EDUCATED BUSINESS COMMUNITY AND PUBLIC. WHILE I FEEL THAT THE STATE HAS DONE AN EXCELLENT JOB OF GETTING CONTROL OF THE UNDERGROUND TANKS PROBLEM, THE POTENTIAL IS THERE FOR THIS PROBLEM TO FAR OUTSTRIP MAINE'S CAPACITY TO DEAL WITH IT UNLESS THE FEDERAL GOVERNMENT GETS MORE FULLY INVOLVED. HOWEVER, AND I MUST MAKE MY POINT MOST EMPHATICALLY, FEDERAL INVOLVEMENT SHOULD SERVE TO HELP CURRENT MAINE EFFORTS AND PROGRAMS RATHER THAN TO EITHER DIRECT OR SUPERCEDE THEM. THE FEDERAL LEAKING UNDERGROUND STORAGE TANK (L.U.S.T.) PROGRAMS SHOULD BE FLEXIBLE ENOUGH TO SUPPORT RATHER THAN HINDER OR DUPLICATE STATE PROGRAMS THAT ARE ALREADY EFFECTIVE.

WHAT DO I SUGGEST FOR A FEDERAL ROLE IN THIS AREA? THE MAINE EXPERIENCE HAS TAUGHT US THAT THE PETROLEUM INDUSTRY IS QUITE CAPABLE OF FINANCING A SIGNIFICANT PORTION OF THE UNDERGROUND TANKS PROGRAM, BY MEANS OF A MODEST PER GALLON FEE ON PETROLEUM PRODUCTS. PERHAPS A NATIONAL FEE SYSTEM COULD BE INSTITUTED THAT WOULD ENABLE STATES TO FUND THEIR L.U.S.T. PROGRAMS ADEQUATELY WHILE PROVIDING THE INDUSTRY WITH A MEASURE OF UNIFORMITY FROM ONE STATE TO THE NEXT. OTHER POSSIBILITIES TO CONSIDER FOR ANY NATIONAL LEGISLATION WOULD BE NATIONAL TANK DESIGN AND INSTALLATION STANDARDS, NATIONAL CLEANUP AND COMPLIANCE STANDARDS AND A NATIONAL RESEARCH EFFORT TO ANSWER THE MANY REMAINING QUESTIONS ON THE TRANSPORTATION AND FATE OF PETROLEUM PRODUCTS THAT HAVE LEAKED FROM UNDERGROUND TANKS.

THE PROPER DISPOSAL OF SOLID WASTE IS AN AREA WHERE NEW FEDERAL LEGISLATION IS OF FAR LESS IMPORTANCE THAN THE APPROPRIATION OF FUNDS TO HELP IMPLEMENT THE SOLID WASTE REQUIREMENTS OF THE FEDERAL RESOURCE CONSERVATION AND RECOVERY ACT.

MAINE'S STATE AND LOCAL GOVERNMENTS HAVE HAD TO GO IT ALONE WITH REGARD TO FUNDING THE MANAGEMENT OF SOLID WASTES. THERE IS A NEED FOR THE FEDERAL GOVERNMENT TO FINANCIALLY ASSIST STATE AND LOCAL GOVERNMENTS TO DEAL WITH SOLID WASTE WITHOUT AN ATTEMPT TO IMPOSE SO-CALLED NATIONAL PRIORITIES ON MAINE'S PROGRAM. YOU ARE PROBABLY AWARE THAT MAINERS HAVE BEEN SO CONCERNED WITH THE PROSPECT OF NEW AND HUGE COMMERCIAL LANDFILLS THAT WE HAVE IMPOSED A MORATORIUM ON THEIR DEVELOPMENT. THE PROBLEM AROSE BECAUSE THE DEFINITIONS FOR "SPECIAL AND HAZARDOUS" WASTES ARE DIFFERENT IN STATES SUCH AS MASSACHUSETTS THAN IN MAINE. THE RESULT IS AN ACCIDENTAL BUT REAL INCENTIVE FOR WASTES FROM SUCH STATES TO BE DISPOSED OF HERE IN MAINE. THE FEDERAL GOVERNMENT COULD HELP GREATLY BY INSTITUTING A UNIFORM NATIONAL DEFINITION FOR THESE AND OTHER TYPES OF WASTES. MANY IF NOT MOST UNLINED LANDFILLS OR DUMPS IN MAINE AS ELSEWHERE ARE NOW BELIEVED BE POLLUTING GROUNDWATER. WE AS A NATION MUST BE PREPARED TO COMMIT OURSELVES ANEW TO THE GOAL OF SOLID WASTE RECYCLING AND REDUCTION AT THE SOURCE, REGARDLESS OF THE COST IN INCONVENIENCE, IF WE ARE TO HAVE ANY REALISTIC CHANCE TO ELIMINATE GROUND WATER POLLUTING LANDFILLS FROM THE LANDSCAPE.

POLLUTION FROM IMPROPERLY STORED ROAD SALT MIX, THOUGH ONLY A NORTHERN STATES PROBLEM, IS WIDESPREAD AND SEVERE ENOUGH TO MERIT SOME NATIONAL ATTENTION, ALTHOUGH HERE AGAIN MAINE HAS MADE A GOOD START TOWARD ADDRESSING THE PROBLEM. NEARLY ALL MAINE COMMUNITIES ARE AFFECTED IN SOME WAY BY THE SALT STORAGE PROBLEM. ONE CONSERVATIVE CURRENT ESTIMATE IS THAT BUILDING PROPER STORAGE FACILITIES WILL EVENTUALLY COST MAINERS IN EXCESS OF $100 MILLION. FORTUNATELY SOME OF THIS COST WILL BE OFFSET BY SAVINGS RESULTING BY NOT LOSING THE SALT TO THE GROUNDWATER. EVEN SO, THERE IS THE NEED FOR SOME FORM OF FEDERAL FINANCIAL PARTICIPATION, POSSIBLY UNDER A NEW FEDERAL COST SHARE PROGRAM FOR GROUND WATER PROBLEMS THAT ARE STATE OR REGIONAL, RATHER THAN NATIONAL IN SCOPE.

EACH OF THESE SITUATIONS ILLUSTRATES THE NEED FOR THE FEDERAL GOVERNMENT TO PARTICIPATE IN STATE EFFORTS TO ADDRESS A GROUND WATER PROBLEM WITHOUT THE TENDENCY TO TAKE OVER OR DOMINATE STATE PROGRAMS. THE TYPES OF GROUND WATER PROBLEMS FROM PARTICULAR SOURCES, AND STATE PROGRAMS TO DEAL WITH THEM OFTEN SEEM TO DEVELOP AND EVOLVE MUCH MORE QUICKLY THAN THE FEDERAL GOVERNMENT CAN RESPOND. BY THE TIME A FEDERAL PROGRAM ADDRESSING A SPECIFIC SOURCE OF GROUND WATER CONTAMINATION IS UNDERWAY, THE STATE PROGRAM HAS ALREADY BEEN RUNNING FOR SOME TIME AND LIKELY DOING A PRETTY GOOD JOB OF ADDRESSING THE PROBLEM. CLEARLY WHAT IS NEEDED AT THE NATIONAL LEVEL IS A COMPREHENSIVE FEDERAL PROGRAM TO HELP THE STATES ADDRESS THEIR VARIOUS GROUND WATER PROBLEMS. RATHER THAN DICTATING TO THE STATES WHAT THEIR GROUND WATER PRIORITIES WILL BE, THE CONGRESS AND EPA SHOULD MAKE IT A NATIONAL PRIORITY TO SUPPORT AND ASSIST STATE EFFORTS TO TACKLE STATE GROUND WATER PRIORITIES.

ANOTHER LONG TERM THREAT TO MAINE'S GROUND WATER IS THAT POSED BY RESIDENTIAL GROWTH. SERIOUS EFFORTS TO ADDRESS THIS CONCERN IN MAINE HAVE BARELY GOTTEN STARTED. LOCAL GOVERNMENTS AND TOWNSPEOPLE ARE THE FRONT LINE OF DEFENSE AGAINST THE GRADUAL DEGRADATION AND OVERUSE OF GROUND WATER IN MAINE, YET THERE HAS BEEN LITTLE OR NO RECOGNITION OF THIS FACT AT THE NATIONAL LEVEL. THE MAINE LEGISLATURE IN 1986 AUTHORIZED A 2-YEAR $50,000 PROGRAM TO PROVIDE TECHNICAL GEOHYDROLOGICAL EXPERTISE TO TOWNS ATTEMPTING TO ASSESS THE GROUND WATER THREATS POSED BY PROPOSED LAND USE DEVELOPMENTS THAT HAVE BEEN DESIGNED TO AVOID REVIEW BY THE STATE. OBVIOUSLY, SUBURBANIZATION IS NOT JUST A MAINE PHENOMENON. PERHAPS A FEDERAL INCENTIVE PROGRAM COULD BE CREATED TO BETTER EQUIP LOCAL OFFICIALS TO DEAL WITH GROUND WATER THREATS AT THE LOCAL LEVEL. THE FEDERAL WELL HEAD PROTECTION PROGRAM WOULD APPEAR TO BE A GOOD START, BUT

IT FAILS TO CONSIDER AREAS BEYOND THE PURVIEW OF PUBLIC WATER SUPPLY UTILITIES. IT ALSO CALLS FOR NO DEGRADATION OF GROUNDWATER WITHIN THESE AREAS, YET MAINE'S GROUNDWATER POLICY CALLS FOR NO DEGRADATION OF ANY OF ITS GROUND WATER. AGAIN HERE IS A CASE WHERE GREATER FEDERAL PROGRAM FLEXIBILITY WOULD BE VERY HELPFUL.

IMPORTANT AS IT IS TO PROVIDE LOCAL GOVERNMENTS WITH A MEASURE OF GEOHYDROLOGICAL EXPERTISE, THIS EXPERTISE IS OF LITTLE VALUE IF THERE IS A LACK OF BASIC GROUND WATER DATA TO EVALUATE. AS IS INDICATED IN THE WRITTEN TESTIMONY SUBMITTED BY MY COLLEAGUES IN OTHER STATE AGENCIES, THERE IS A PRESSING NEED FOR A BETTER UNDERSTANDING OF THE VARIOUS GROUND WATER RESOURCES WE ARE TRYING TO PROTECT. MAINE'S EFFORTS TO IDENTIFY AND MAP BOTH SAND AND GRAVEL AND BEDROCK AQUIFERS HAVE BEEN HINDERED BY A LACK OF FUNDS AT BOTH THE STATE AND FEDERAL LEVEL TO CARRY OUT THE PROGRAM. THE SAME MAY BE SAID OF MAINE'S EFFORTS TO CONDUCT OTHER TYPES OF GROUND WATER RESEARCH SUCH AS DETERMINING THE FATE OF A WIDE VARIETY OF SUBSTANCES IN VARIOUS GROUND WATER ENVIRONMENTS OR TO BETTER UNDERSTAND THE RADON PROBLEM. ALL THE EPA GROUND WATER PROGRAM DEVELOPMENT OR UNDERGROUND INJECTION CONTROL FUNDING IN THE WORLD WILL BE OF LITTLE VALUE IF STATES SUCH AS MAINE NEVER GAIN A USABLE BASE OF GROUND WATER INFORMATION. THERE IS A NEED FOR GREATER PROGRAM FLEXIBILITY AND AN OVERALL INCREASE IN FEDERAL COMMITMENT TO THE IMPROVEMENT OF OUR LEVEL OF UNDERSTANDING OF THE GROUND WATER RESOURCE AND ITS VULNERABILITY TO CONTAMINATION.

THE WELL HEAD PROTECTION PROGRAM AND THE CRITICAL AQUIFER PROTECTION PROGRAM UNDER THE FEDERAL SAFE DRINKING WATER ACT REPRESENT A GOOD FEDERAL START AT DEALING WITH LOCAL GROUND WATER PROTECTION PRIORITIES. WHAT IS NEEDED IS A SOMEWHAT BROADER AND MORE FLEXIBLE APPROACH SUCH AS THE INCLUSION OF NON-PUBLIC

(I.E. NON-WATER UTILITY) WATER SUPPLIES WITHIN THE WELL HEAD PROTECTION PROGRAM, COUPLED WITH FEDERAL FUNDING AND TECHNICAL OR MONITORING ASSISTANCE TO HELP IMPLEMENT THE PROGRAMS. HERE AGAIN, IT IS IMPERATIVE THAT THE FEDERAL GOVERNMENT MAKE A LONGLASTING COMMITMENT TO THE STATES TO IMPLEMENT THE PROGRAMS IT DIRECTS THEM TO DEVELOP. THE LONG STANDING FEDERAL TENDENCY TO CUT STATES LOOSE AFTER GETTING THE PROGRAMS STARTED IS A MISGUIDED INVITATION TO FAILURE. STATE AND LOCAL GOVERNMENTS REALLY DO NEED LONG-TERM HELP IF SUCH PROGRAMS ARE TO HAVE ANY MEANINGFUL OR LONG LASTING EFFECT.

WHILE I COULD MENTION SEVERAL OTHERS, THERE IS ONE MORE AREA IN PARTICULAR WHERE A GREATER FEDERAL ROLE IS NEEDED, NAMELY THE DEVELOPMENT OF GROUND WATER STANDARDS AND HEALTH EFFECTS CRITERIA. THE INABILITY TO DEVELOP THESE OR ASSESS THEIR RISK TO HEALTH IN A TIMELY FASHION, HAS SERIOUSLY HAMPERED MAINE'S ABILITY TO REGULATE CERTAIN GROUND WATER CONTAMINANTS. ONE EXAMPLE IS DIOXIN. GOOD BASIC, TECHNICAL INFORMATION IS SORELY NEEDED TO SUPPORT INFORMATION DEVELOPED AT THE STATE LEVEL. AGAIN, FEDERAL FLEXIBILITY AND FOLLOW THROUGH ARE ESSENTIAL TO THE SUCCESS OF SUCH EFFORTS.

I HOPE MY REMARKS HAVE CONVEYED A FEW KEY CONCEPTS REGARDING THE GROUND WATER SITUATION HERE IN MAINE - THAT WE NEED SUPPORT FROM THE FEDERAL GOVERNMENT FOR STATE PROGRAMS, WE NEED BETTER INFORMATION SO THAT WE CAN PREVENT GROUND WATER CONTAMINATION RATHER THAN ALWAYS BEING IN THE CLEAN-UP MODE. WE NEED FEDERAL PROGRAMS THAT ARE FLEXIBLE ENOUGH TO RESPOND TO MAINE'S EVOLVING GROUND WATER PRIORITIES RATHER THAN IMPOSING SO-CALLED NATIONAL PRIORITIES. AND FINALLY, WE NEED THE CONTINUED ACTIVE SUPPORT AND CONCERN OF CONGRESS. IF MAINE IS EVER TO FULLY SUCCEED AT DEALING WITH GROUND WATER POLLUTION PROBLEMS. THANK YOU FOR YOUR CONCERN. I WOULD BE HAPPY TO ANSWER ANY QUESTIONS YOU MIGHT HAVE.

John R. McKernan, Jr.
Governor

Robert R. LaBonia
Commissioner

DEPARTMENT OF CONSERVATION
Telephone (207) 289-2801

June 26, 1987

Senator George J. Mitchell, Chairman
Subcommittee on Environmental Protection
SR 176 Russell Senate Office Building
Washington, DC 20510

Dear Senator Mitchell:

There is currently a strong emphasis on managing and protecting ground water at the Local, State and Federal level. While the management and protection of our ground water resources is both necessary and desirable, it cannot be accomplished without the technical substance to understand the resource we are trying to protect. This understanding can only come from applied research and systematic geologic mapping programs, which are currently funded poorly, or not at all.

In Maine, for example, a program to map sand and gravel aquifers was begun in 1981, using funds from a variety of state and federal programs. These funds have been increasingly difficult to obtain, so that operating the budget for this program in Fiscal Year 1988 is down to $30,000, from a level of more than $200,000 in the early 1980's. At this funding level it will be many years before mapping can be completed in the State, delaying efforts to classify or protect Maine's aquifer systems.

Other ground water research is sorely needed, but is not funded at all. Understanding our fractured bedrock aquifers, the source of drinking water for more than 50 percent of Maine's rural population, is critical. Research into the fate of a variety of organic chemicals and pesticides in Maine's ground water is needed. An understanding of the geochemical processes leading to high radon levels in many of our deep bedrock wells could prevent such wells from being drilled in the future. Gaining the ability to accurately model and predict deep ground water flow regimes in the State would greatly aid in siting decisions for radioactive or hazardous waste facilities. Monitoring ground water levels and quality in long term monitoring wells would allow an assessment of the impact of development on Maine's ground water quality and quantity.

Geologic and ground water research and mapping programs which has been completed by the Maine Geological Survey and other agencies has been widely used by federal, state, municipal, industrial and private concerns. The data base developed through these programs has delivered a strong case against the D.O.E.'s effort to develop a high-level nuclear waste facility in Maine.

Aquifer systems in northern New England are very different from those in other regions. Our surficial aquifers consist of glacial and alluvial sediments of very recent origin. Our bedrock aquifers consist primarily of fractured crystalline rock. Both our surficial and bedrock aquifers are usually very local in nature, with flow paths restricted to hundreds of feet. This is in sharp contrast to sandstone aquifers in the Midwest in which flow paths may extend for many miles; or to the Karst aquifers in the South, where ground water flow is in large tunnels or channels. In Maine ground water quality is our major concern; in the western states insufficient ground water quantity is the primary ground water problem. Due to these differences in aquifer systems, ground water research and mapping are best done on a state or regional basis. However, ground water research is expensive. State's need financial assistance from the Federal government to fund much of this research. This type of assistance would be far more valuable than passing national legislation to regulate or manage our ground water resources.

In summary, ground water protection and management programs cannot stand alone without a foundation of research and technical substance. Too often environmental programs are established which ignore these latter issues.

I welcome the opportunity to express my views concerning the proper role for the federal government in protection of ground water. If you have any questions, I will be pleased to answer them.

Sincerely,

Walter A. Anderson, Director
State Geologist

/cf

STATE OF MAINE
EXECUTIVE DEPARTMENT
STATE PLANNING OFFICE

JOHN R. McKERNAN, JR.
GOVERNOR

RICHARD H. SILKMAN
DIRECTOR

July 15, 1987

Jeff Peterson
Environmental and Public
Works Committee
United States Senate
Washington DC 20510

Dear Jeff,

I hope the Senator was as pleased with the July 2 groundwater hearing as I was. People important to my State Programs received an education in listening to the local representatives and I believe our concerns and hopes regarding federal programs and legislation were expressed. I would be pleased to be of further assistance to your future efforts, and I trust you will keep me informed as to your progress.

The Senator requested additional information on our proposed State groundwater classification system. I will try to explain the system as briefly and clearly as I am able, however, I hasten to point out that this is an experimental proposal undergoing pilot testing and modification at the present time.

The classification system was originally a proposal (attached) of the Groundwater Classification Subcommittee of the State's Ground Water Standing Committee. Because Maine's groundwater is predominantly uncontaminated and available for residential use in virtually all locations, the classification system was designed to maintain the resource, ie. no (further) degradation allowed, and to identify the level of protection required for State and local officials responsible for protection of the resource. That level of protection is to be determined according to the vulnerability of the resource to surface and near-surface contaminants (whether licensed discharges or accidental spills). Because the resource is available virtually everywhere, all areas of each community must be classified.

The classification system is three-tiered: high, moderate, and low vulnerability. Contaminated areas will be designated as non-compliance areas but this will in no way affect the classification. Areas in which there is insufficient yield to supply a single-family residence will automatically be placed in the low vulnerability classification.

We originally intended to use the NWWA/EPA DRASTIC model to determine vulnerability. This model has unsolved problems. We, therefore, constructed our own model, which we are presently

184 STATE STREET, STATE HOUSE STATION 38, AUGUSTA, MAINE 04333 TEL. (207) 289-3261 or 3154

evaluating, using the criteria that we believe to be most important: 1) depth to water table or bedrock, 2) soil media, 3) surficial geology, 4) recharge or discharge zone. (Remember that we are trying to protect the top of the water table or bedrock and are, therefore, unconcerned, for our purposes, with intra-aquifer processes.) The parameter ranges selected for each criteria are shown in the Groundwater Vulnerability Evaluation System (attached). We are currently experimenting to select the proper weights for each criteria. As in the DRASTIC system, the rating will be multiplied by the weight, and resultant numbers for each criteria summed. Cutoff numbers will be selected to divide high from moderate from low vulnerability based on our professional experience.

The procedure we are following to create the vulnerability map for our pilot town, Lamoine, is detailed in Lamoine Project -- Methodology (attached). As you can see, several other information graphics are provided to make the local situation understandable. The location of wells and potential threats to groundwater (anything utilising/storing dangerous chemicals) are provided as overlays of the vulnerability map. The boundaries of significant aquifers and flow directions are also provided to clarify the situation.

The process for proper use of this information is detailed in The Planning Process for Local Groundwater Protection (attached). The state hopes some day to have the resources mentioned in this document available for assistance to each town in Maine. This is a local self-help project; the state provides only those services unavailable in most communities. Local volunteers provide well and threat locations and much of the depth to water table/bedrock data through community surveys. The state classifies and provides a set of maps clarifying the local situation and helps the community select from control options to create a local groundwater protection plan that it feels a part of, feels responsible for, can support and live with.

I'll stop here and let you digest this. If you have further questions, please call me. If I can provide further information, just ask. Hope to hear from you soon.

Sincerely,

Paul W. Dutram

Paul W. Dutram
State Groundwater Coordinator

PWD/1
Enclosures
cc: Dean Marriott

GROUNDWATER CLASSIFICATION SYSTEM

Proposed by the Groundwater Classification Subcommittee

of the

Land and Water Resources Council's

Ground Water Standing Committee

May, 1986

Groundwater Classification Subcommittee Members

Esther Lacognata, Chair	Department of Agriculture, Food & Rural Resources
Nancy Anderson	Maine Audubon Society
Meredity Murray	Natural Resources Council of Maine
Jay Adams	Maine Organic Farmers & Gardeners Association
Mike Colwell	Associated General Contractors
Kay Rand	Maine Municipal Association
Pat Grady	Maine Water Utilities Association
Frank Fiore	Department of Environmental Protection
Charles Rossoll	Department of Human Services
Holly Dominie	State Planning Office
Andy Tolman	Department of Conservation
Tony Pisanelli	New England Interstate Water Pollution Control Commission
Bruce Rosinoff	U.S. Environmental Protection Agency
Paul Dutram	State Groundwater Coordinator

INTRODUCTION

The Legislature, in establishing the Ground Water Protection Program of 1979, found that "an adequate supply of safe drinking water is a matter of the highest priority and that it is the policy of the State to protect, conserve and maintain ground water supplies in the State." (38 MRSA 401) It also found and declared it the purpose of the Act to "require classification of the State's ground water resources." (38 MRSA 401) The Legislature further found that "sand and gravel aquifers are important public and private resources for drinking water supplies and other industrial, commercial and agricultural uses." (38 MRSA 403)

The current classification system consists of one class. All groundwater is classified as not less than GW-A. However, the Board of Environmental Protection "may recommend to the Legislature the reclassification of any groundwater, after careful consideration, public hearings and in consultation with other State agencies and the municipalities and industries involved." (38 MRSA 371-B).

In 1985 the Land and Water Resources Council of the State in response to an Executive Order established a Ground Water Policy Committee to further investigate the State groundwater protection strategy. That Committee held a number of informal meetings with an Advisory Committee that included representation from Maine Audubon, Natural Resources Council of Maine, Maine Organic

Farmers & Gardening Association, Maine Municipal Association, Maine Chamber of Commerce and Industry, Maine Association of Planners, Maine Well Drillers Association, Maine Water Utilities Association, Maine Rural Water Utilities Association, Associated General Contractors of Maine, two farmers and Maine Petroleum Association.

Among the many recommendations was one to develop a pilot scale management goal-based groundwater classification and land use control system and to report recommendations for further action to the full Council by January 1, 1986.

A groundwater classification subcommittee chaired by Esther Lacognata of the Department of Argiculture, Food & Rural Resources, and consisting of representatives from Maine Audubon, Maine Organic Farmers & Gardening Association, Maine Municipal Association, Natural Resources Council of Maine, Maine Water Utilities Association, Associated General Contractors of Maine, State Planning Office, the Departments of Conservation, Human Services, and Environmental Protection, and technical help from USEPA Region I and the New England Interstate Water Pollution Control Commission (NEIWPCC) was called upon to develop the groundwater classification system.

The following issues were addressed.

1. Is a classification system needed?

2. What is meant by classification? Do we want many detailed classes or should we keep it simple?

3. What should be the basis for classification: quality, use, vulnerability?

4. What does a non-degradation policy mean? Does it mean that all groundwater must be brought up to drinking water standards, or that no further degradation should be allowed?

5. What should be done about existing known contamination?

6. How should those land use activities be located that, in spite of best intentions and promises, have some probability of discharging some contaminants into groundwater?

7. How can maximum protection be provided for private water supplies?

8. What are the public costs of regulation?

To assure that the discussions were based on more than preconceptions, the effort began by the subcommittee members informing themselves. First, the subcommittee invited staff representatives from two New England States, Connecticut and Massachusetts, each of which have quite different approaches to groundwater protection. Tony Pisanelli of NEIWPCC briefed the subcommittee about the programs of other New England states.

Presentations were made by Maine geologist, Andy Tolman, and Holly Dominie, who is conducting a study of the cumulative impact of development in nine southern Maine communities. A recent groundwater protection survey and analysis of information from the Environmental Law Institute was also distributed.

After this set of subcommittee meetings, it became apparent that the members of the subcommittee were sorely in need of some hydrogeological information. Peter Garrett arranged a teach-in for the subcommittee members and other interested persons. Geologists from DEP and MGS touched on the concepts of flow systems, attenuation, plumes, topography, and conductivity.

This report is truly the result of the participation of a hard working dedicated committee. Each Subcommittee member was asked, in January, to submit his or her ideas of a classification system. With the technical and writing expertise of Dr. Peter Garrett, geologist at DEP, the chairman started pulling together drafts of the emerging consensus. Each draft, of which this is the fourth, was circulated to the committee, the new issues that emerged were discussed and drafts modified to reflect the emerging consensus. This report should still be considered a draft. The subcommittee asks all readers to submit comments or suggestions for modifications either to the chairman or to Paul Dutram, the State Groundwater Coordinator.

GROUNDWATER CLASSIFICATION SYSTEM

GOAL

THERE SHALL BE NO CURRENT OR FUTURE DEGRADATION OF NATURAL GROUNDWATER QUALITY IN MAINE.

Note: This goal builds on existing State policy:

"It is the policy of the State to protect, conserve and maintain groundwater supplies in the State."

(38 MRSA Article 1-B)

and

"It is the policy of the State of Maine to allocate, protect and monitor Maine's groundwater resources, through measures which protect public and environmental health, meet future water supply needs, and encourage a sound economy."

(Final Report of Groundwater Review Policy Committee, Spring 1985)

ASSUMPTIONS

The classification subcommittee operated under the following set of assumptions or principles in developing this proposal.

1. Prevention of groundwater contamination is better than cleanup, in terms of health, engineering and cost.

2. Because geologic factors cause considerable differences in yields and attenuative capacities, not all groundwater of usable quality is equally valuable or vulnerable to contamination.

3. A classification scheme offers the mechanism to offer special protection to that groundwater which, due to current or potential use, is most valuable and vulnerable.

4. A classification system offers municipal officials and developers information and a planning tool to anticipate development and protection needs.

5. Flow systems are the basic unit requiring protection. Flow systems include recharge areas (commonly hill tops and slopes) and discharge areas (near surface water or wells). Flow systems cut across mapped aquifer boundaries but can be defined by hydrologic analysis.

6. Geologic and hydrologic analysis is never complete. New information may require new decisions on classification. Lack of information demands strong protective measures.

7. Groundwater eventually discharges to surface water. The water quality of the receiving surface water body and the contributing groundwater formations should be compatible.

8. Threats to groundwater come principally from land use. Thus protection of groundwater requires land use controls commensurate with the vulnerability and current and projected demand for that groundwater.

9. Private water supplies, as well as public water supplies, require strong protection measures despite some unavoidable land use conflicts.

10. The burden of showing that compliance with the non-degradation goal and with groundwater quality protective measures is attainable rests with the applicant for development approval and should be determined prior to development approval.

11. Accidental leaks and spills of chemicals may pose as great a threat to groundwater as regulated discharges from industrial, municipal, domestic or agricultural sources. Thus proper siting is good prevention.

12. There is a likelihood that areas of long-term industrial, commercial, or dense residential use may be underlain by contaminated groundwater. This should not be justification for less protection or further contamination.

13. Few contamination plumes in Maine extend over more than 1/2 mile in length, nor more than 100 acres in area. This is due to the nature of Maine's groundwater flow systems which usually include only the area between hills and neighboring surface water bodies.

POLICIES

The following policies are intended to guide the decisions of local and State public officials as they take steps to achieve this goal.

It is hoped that these policies will set a strong standard for all groundwaters across the State, regardless of whether or when a protection system is put in place in any given area.

Policy 1

There shall be no discharges of pollutants to groundwater. Land use activities which have the potential to discharge pollutants to the soil shall be allowed only if the latest, technologically

effective practices are utilized and the attenuative capacity of local geological deposits prevents degradation of groundwater quality.

Note: This policy is based on the recognition that certain normal human activities result in discharges to the soil and that local geologic deposits have various degrees of attenuative capabilities. In implementing this policy, local officials have to consider the extent to which these activities threaten the groundwater and the attainability of the non-degradation goal. For example, septic systems are currently expected to attain the no degradation policy within a "reasonably limited area", and the application of certain pesticides is prohibited within a buffer zone around existing wells. Similar standards should be reviewed and mandated for other potential pollution sources such as landfills, heavy oils leaking from underground storage tanks, certain stored hazardous wastes, and pesticide and fertilizer spreading.

The concept of attenuation has no validity for such persistent contaminants as salt, nor for gasoline or other light oils leaking from underground storage tanks. Sand/salt piles must be covered or relocated. Tanks must be leak proof. In these cases, attenuation will not take the place of best management practices.

Policy 2

When groundwater is polluted, sources of pollution shall be removed or contained, whenever possible, so that the restoration of groundwater quality may proceed by natural processes or by the application of technology.

Note: This policy is based on the recognition that artificial clean-up of groundwater is expensive and, therefore, would be unrealistic to mandate in all cases. However, the goal requires that further degradation not be allowed. It is current DEP practice to remove the source of most threats to groundwater such as the leaking tank, the salt pile, the hazardous waste lagoon, and the uncovered manure pile. This policy confirms DEP's existing practice.

Policy 3

No development or use of land shall cause salt water intrusion, unreasonable changes in groundwater flow patterns or water table height, or cause significant ground subsidence.

Note: This policy addresses the cumulative impact of land use development. It guides the local officials to consider not only the impact of the private residence but the net effect when many individual residences draw on groundwater. Salt water intrusion and the damage by land subsidence are not unheard of in Maine. They have already occurred in coastal areas.

Policy 4

Through a groundwater classification system, the State shall provide guidance for extra protection for sensitive groundwater systems.

Policy 5

The municipality shall require the appropriate siting of new facilities and activities and performance standards for all facilities and activities not regulated by the State that may pose a threat to local groundwaters in order to minimize damage should their no-discharge systems fail.

Policy 6

Groundwater quality shall not degrade the classification of the surface water body into which it discharges.

CRITERIA FOR A GOOD CLASSIFICATION SYSTEM

Prior to preparing the classification system the subcommittee identified the following characteristics of a good classification system. It:

1. Is simple and easily understood.

2. Provides differential protection based on sensitivity and availability for use as a drinking water supply.

3. Provides information on the groundwater resource and management implications, in anticipation of proposed changes in land use.

4. Allows local input into identification of classes, and drafting of management options.

5. Is sufficiently flexible that it can be adapted to local circumstances and modified with time.

6. Is enforceable.

CLASSIFICATION SYSTEM

This classification system is one aspect of a comprehensive management system to protect our groundwater. The existing local and State land use ordinances and permit requirements provide important protection. This scheme is offered just as guidance to local officials. The subcommittee is recommending that means of implementing the policies in this report and this classification be further explored by the Standing Committee and local officials.

The classification system is based on the contamination potential (vulnerability) and actual and projected groundwater use. Its primary means of implementation is through land use controls. Many appropriate land use controls for each class are available. A well honed locally developed system would vary the control of activities, either by type of activity or standards of conduct, in direct proportion to the sensitivity of and the present and future need for the groundwater.

The State will provide technical information concerning groundwater availability, vulnerability and flow patterns. Municipalities will provide information related to land use, sources of contamination and local water utility systems.

While not affecting the groundwater classes, groundwater known as or strongly suspected of being contaminated by natural or manmade causes shall be identified on classification maps.

The basic groundwater protection class will be GAA. Important, vulnerable aquifers will be assigned the highest protection class, GAAA. The class GA designation will be assigned to the non-vulnerable geologic formations least likely to be in demand for drinking water purposes.

DRAFT GROUNDWATER CLASSIFICATION SYSTEM

Class GAAA

Reason for Classification	Identifying Characteristics*	Management Implications
Groundwater is currently being used for or is potentially capable of withdrawal for public or private water supplies; or is connected to a sensitive ecosystem; and is highly vulnerable to contamination.	Areas of this class will be identified by: a) a zone of influence around a public or private water supply or spring. If information about a zone of influence is lacking, boundaries shall be drawn to afford more rather than less protection; or b) other areas potentially of use for public or private water supplies. Boundaries must be drawn as to allow for a reasonably expanded zone of influence when a well field is established; or c) areas hydrogeologically connected to a sensitive ecosystem; and d) areas with a high potential for contamination determined by such tools as DRASTIC, delineation of the primary recharge zone, or some other measure. (NOTE: Zone of influence is defined as the area within the 200 day travel time around a water supply well. DRASTIC is a method of groundwater assessment developed by the National Water Well Association and the USEPA.)	The land area over these aquifers should protected to the maximum extent possible. Use of the police powers of the locality are certainly justified for the protection of the public health and safety. Land use activities which pose a significant threat to groundwater quality should be prohibited. Various protection methods may be used in proportion to the sensitivity of the aquifer and present and future need for the groundwater. Different parts of a zone of influence could be protected by different protection methods.

*non-conforming contamination, whether natural or man-made, should be identified on all maps regardless of classification.

Class GAA

Reason for Classification	Identifying Characteristics*	Management Implications
Groundwater is currently being used for or is potentially capable of withdrawal for public or private water supplies, and is of medium vulnerability.	All areas which are not identified in either of the other two classes belong in this class.	This class should offer basic protection for groundwater supplies. Although the State has made significant progress in adopting protective regulations and statutes and many municipalities have adopted local protection methods, current State and local programs do not offer sufficient protection for this general class. Municipalities should take additional steps to provide the protection necessary for this basic class. Groundwater quality should be protected by strict application of State and local groundwater policies and groundwater protection programs. Land uses which may conflict with the provision of high water quality to wells or springs (such as old buried oil storage tanks, uncovered manure piles, sand/salt piles, industrial activities, etc.) shall be avoided or controlled so as to prevent the potential for groundwater contamination.

*non-conforming contamination, whether natural or man-made, should be identified on all maps regardless of classification.

Class GA

Reason for Classification	Identifying Characteristics*	Management Implications
Groundwater is unlikely to be used for public or private supplies because of low yield to wells and is of low vulnerability.	Areas of this Class will be identified by the following: a) geologic mapping of a groundwater formation of low permeability; and b) inadequate well yield to supply the needs of a single family dwelling	Areas identified as this class will not be considered as "free-fire zones" for the contamination of groundwater. State groundwater policies and protection programs will still apply; but certain land uses will be guided here so as to minimize risks. No land use will be perfunctorily excluded, however, performance standards for individual facilities such as landfills, sand/salt piles, septage and sludge spreading, industrial sites, etc., will be in conformance with best available technology and best management practice; and will be no less stringent than current State standards. Beyond that, the degree of protection shall vary in proportion to the sensitivity of the aquifer and present or future need for the groundwater. (NOTE: As far as possible, the natural flow system(s) of which these class areas are a part will be considered in drawing the boundaries of identified areas.) Land may be suitable for siting of land uses with potential threats to groundwater because of: a) soils with high natural capacity to absorb pollutants; and/or b) its function as a hydrologic discharge area adjacent to Class B or C surface water.

*non-conforming contamination, whether natural or man-made, should be identified on all maps regardless of classification.

BUILDING CAPACITY AT THE LOCAL LEVEL: A PRIORITY FOR THE NATIONAL GROUNDWATER PROGRAM

Testimony to
The United States Senate Subcommittee on Environmental Protection
by
Mr. John E. Walker
Executive Director, Greater Portland Council of Governments;
Chairman, Maine Association of Regional Councils Directors' Association

July 2, 1987, Augusta, Maine

Senator Mitchell and distinguished members of the Senate Subcommittee on Environmental Protection. It is an honor to be invited here today to present concepts for your consideration as you formulate a national strategy for preserving and enhancing the nation's groundwater resource. My testimony derives from my six years experience in providing executive leadership to the Greater Portland Council of Governments (GPCOG), the federally designated regional planning commission for Maine's most urban region, Cumberland County, and three years of service as Chair of the Maine Asssociation of Regional Councils Directors Association (MARC), where I work with the staff and policy leaders of all regional councils and planning commissions in the State of Maine.

GPCOG, and Maine's other regional councils, are designated by the federal and state governments to be the formal mechanism for intergovernmental planning and development activities among the State's local governments. Though the federal government, under the present administration, has withdrawn considerable financial support from this intergovernmental concept, and state authorities have been slow to provide support, the regional council system remains a promising mechanism in Maine and in the nation to achieve environmental management priorities.

The fact that regional councils have continued to thrive is testimony to the leadership of municipal officials throughout Maine who support a rudimentary planning and data capacity to address growth problems and opportunities. It is also testimony to the quality of our work over the past three decades in pursuing our organizations' mission to help the local leaders of our state successfully come to grips with community needs and regional priorities. We have demonstrated that we are capable of addressing complex land use and development matters.

One of our top priorities and most challenging land use issues is the preservation, maintenance, and enhancement of water supplies, especially groundwater.

LEGISLATIVE STRATEGY:

Groundwater is a significant water resource for our state and the other states of the union. Rural areas, which predominate in Maine, rely almost exclusively on groundwater. It is, therefore, a planning and land use priority for our local governments. We applaud this initiative by your subcommittee and support a distinct legislative initiative addressing groundwater planning and management throughout the country through concise, reasonable federal policy. We feel any program should stress both capacity building at the local level and prevention. Let me explain my emphasis.

If the nation is to sustain a meaningful groundwater resource it must recognize how this resource is threatened and how it can best be protected. Almost paradoxically, the answer to both questions is local land use practices. If local land use practices are good, the supply may be protected, if inadequate or even irresponsible, then the supply will be endangered. While it is important to address specific sources of degradation such as underground oil tanks, it is more important to address local governments' capacity to identify threats to the source and to manage these threats by effective ongoing planning, public education and resource management programs.

A thoughtful, comprehensive land use and water supply maintenance program at the local level can be implemented across the country with the support of a progressive federal initiative for groundwater. The local leaders and regional councils of this state are prepared to commit to such a strategy if given the opportunity to do so. This opportunity would present itself in two ways: first, financial resources must exist to ensure that a meaningful groundwater program, based on capacity building at the local level, can be carried out over a several year time frame; second, more important perhaps than the first, national policy should require states to build that local capacity primarily through local planning and policy organizations. Water quality bureaus in the state capital should play a role in monitoring and research.

We urge that your groundwater policies emulate or build upon two successful federal programs that support local capacity building and responsible action at the local level while ensuring that state and federal priorities are met--the Clean Water Act's EPA 208 Water Quality and related sewer grants program and the Federal Highway Administration's Metropolitan Planning Process. Both programs achieve their federal objectives, strengthen the intergovernmental process, and build sustained commitment and momentum at the local level for the national goals set by our leaders in Congress.

In our region the 208 process has been an enormous success reclaiming lakes, streams and our harbors for recreational, commercial and other economic purposes. The federal, state and local partnership was a tremendous success. Though EPA has unwisely, in our opinion, withdrawn ongoing local planning and management funds, local officials and our water districts remain committed to the Water Quality Act's goals and are actively addressing sewer and other water quality management measures with the limited resources available to them throughout Maine.

The FHWA process also has been an effective program. Local and state leaders carefully plan their highway and transit needs before either can receive federal investment funds. The result has been a fairly orderly development of the regional highway systems since World War II.

Both programs have been maintained at a reasonable cost over time. The planning monies, relative to the capital investments, are a small amount. Of great significance, in my mind, they strike an effective balance between the investment responsibilities of the local, state and federal governments. Recently, local and state shares of these infrastructure investments have increased. Federal dollars leverage considerable state and local investment for these national priorities.

Finally, both programs promote continuity over time and have the flexibility to address unique requirements of various economic regions. Coordination is achieved on both short-term and long-term objectives. Local planning capacity is sustained providing leaders at all levels of government with a consistent set of measures of local achievement over time. The technical resources are available to adjust strategies and programs to meet changing needs. Instead of a quick fix approach, both programs attempt to achieve their solution with rational investments that will pay back in public health and economic growth over many decades. They seed local initiatives, help set achievable goals and have accountability systems in place to ensure taxpayer dollars are spent prudently.

Unquestionably these programs are not perfect. This partnership, like any, needs work. Let us, however, recognize that the partnership can be a success. The region I serve has experienced unparalleled economic growth, growth heralded in newspapers, business magazines and journals across the country. There are many reasons for our economic success, but a primary one is that our region, through the 208 and FHWA metropolitan planning process has its infrastructure needs identified, prioritized, and linked into a local, state and federal investment program. Our sewer and transportation planning and investment has worked and local, state and federal officials can together look back and take credit for the accomplishment. Why not address our future resource priorities such as groundwater in an equally effective manner?

A NATIONAL GROUNDWATER PROGRAM:

Our recommendation is that the national groundwater program be an expansion of the Clean Water Act, building upon the tenets of that landmark initiative. Separate legislation is not needed if the powers of the Clean Water Act and the administrative protocols between the federal, state and local governments are in place and kept in force. This would include the mandate that local governments and their regional planning agencies have a major role in the design and implementation of groundwater programs. (As your subcommittee is aware, the local role had to be buttressed through Congressional action with important changes in the Section 205 (j) language in 1986.)

In initiating a concentrated effort for groundwater, we urge you to refine these protocols and responsibilities among the three levels of government, more in line with the FHWA planning process. The significant difference, similar to the 208 days, is the submission of a local planning and project prioritization process. Presently, USEPA and Maine's Department of Environmental Protection do not support local planning and project identification in a systematic manner though every regional council in the State of Maine has a regional water quality advisory committee in place, prepared to recommend and pursue water quality management initiatives. The FHWA process places primary management responsibility in the local arena, engendering practical, issue specific and appropriate remedies to the infrastructure needs of the region.

The respective roles of the three levels of government would be the following:

FEDERAL:

Establish uniform national standards, short-term and long-term goals and evaluation procedures. Establish policy based upon these goals.

Manage the intergovernmental planning and investment process to ensure annual and long-term goals are met, plans and projects adjusted and coordination achieved.

Finance rudimentary local and state planning and management efforts to ensure a uniform level of minimum delivery across the nation; provide capital funds to each state and region based upon a priority system to build capacity or implement management programs; fund research and demonstration grants to enhance groundwater management through technology and innovative local and state initiatives; and through a "Superfund" type of pool, assist in the costly task of mitigation or reclamation of groundwater sources.

STATE GOVERNMENT:

Establish state priorities and policies given federal guidelines, facilitate local efforts to fulfill the planning process, promote development of resource networks to achieve the local and state plans.

Manage the development of local and regional planning processes based on federal protocols, serve as pass through agency for local grants, and assist in building capacity at the local level for regions requiring such capacity building assistance.

Complement federal financing with state resources, especially with bonding assistance for major capital equipment needs or resource mitigation projects.

LOCAL GOVERNMENT:

Participate in development of state and federal priorities, protocols and attainment measures; perform annual needs assessment and project prioritization programs for submisssion to the DEP and EPA; initiate local regulations and management procedures to protect the resource through ordinances, zoning, operation of utilities and various land use management measures.

Manage an ongoing resource protection process based upon national guidelines and channel local, state and federal investment into local projects based upon annual contracts and work plans agreed to in the intergovernmental process. Municipalities would also be responsible for developing intermunicipal projects for resources that cross municipal boundaries.

Financially contribute to the locally adopted groundwater program through investment in planning and regulatory staff and technology, cash match and local bonding capacity and collection of user fees.

CONCLUSION:

As this State has demonstrated over the years, our local leaders are prepared to pursue progressive policies and programs to meet national environmental goals. Local leaders' support and effectiveness will come about if federal policy supports that role and reasonable financial resources and incentives accompany national programs.

Groundwater is a vital resource for Maine and a coordinated approach to groundwater resource protection is needed. Any approach must recognize that the largest threats to the resource, but also the most effective solutions, will be found at the local level. It is imperative that the nation's groundwater program be aimed at building local capacity to protect, manage, and if possible, enhance the resource. Local initiative should be the primary target of state and federal financial and policy resources.

To achieve coordination and achievement of the goals, we encourage an improved intergovernmental process similar to the original 208 initiative but more on the lines of the FHWA metropolitan planning process. Both of these processes can be implemented in all regions of the country.

Maine's regional councils are prepared to assist this process. Our agencies have the trust of local governments, the support of the State, and the staff and technology available to help. As policy, our regional councils have identified water quality protection as a priority and hope we have the opportunity to assist your subcommittee in meeting this important challenge.

Thank you for the opportunity to testify.

jwwordl

Testimony For
Senate Subcommittee on Environmental Protection
Groundwater Pollution
By Associated General Contractors of Maine

We believe that groundwater contamination is not currently a wide-spread problem in the State of Maine, although there are isolated areas within the State where groundwater contamination is of very serious concern. The major sources of groundwater contamination, in our opinion, are spills from underground fuel and gasoline storage tanks, plumes created from road salt/sand piles, the influence of agricultural chemicals and disposal of agricultural chemical containers, disposal of industrial waste products and municipal waste dumping facilities. Fortunately, the geology of many Maine sites is such that contamination is often contained within relatively isolated areas.

The State of Maine has developed a comprehensive program to address the contamination of groundwater by underground fuel and gasoline storage facilities which has included licensing of existing, as well as proposed, storage facilities. We believe that this program was and is a very necessary undertaking. The State has also developed a program to address groundwater contamination by road salt/sand piles and again, we believe that this is a necessary program. The State has also developed general guidelines for siting new waste disposal facilities as well as for the design of such facilities. Although further work is needed in this area, these general guidelines appear to be working relatively well. It appears that it may be appropriate to adopt some legislation on a nation-wide basis relative to the licensing and control of fuel and gasoline storage tanks and it may also be appropriate to develop some general guidelines on a national basis relative to waste disposal facilities. State control is probably more appropriate for specific problems such as salt/sand piles.

Since groundwater is such a valuable resource and one which is so difficult to clean up after being contaminated, it does appear appropriate that national groundwater protection legislation should be established. This appears necessary to maintain some continuity from state to state and also to address groundwater contamination problems which may cross state lines.

We believe that Congress should consider national comprehensive legislation similar to the Clean Water Act to address a wide range of groundwater contamination sources and waste disposal activities. It appears very important to develop guidelines which will be consistent from state to state which will address underground storage facilities and waste disposal. Such legislation might also include the effects of development of groundwater resources, particularly with relationship to depletion of groundwater resource.

We believe that the goal of federal legislation should first be the prevention of further groundwater contamination and second, the cleanup of existing groundwater contamination. It is very important, however, that industry and in particular, the construction industry, be involved to provide input relative to developing the guidelines and rules for both storage and disposal of potentially hazardous materials. Such legislation should consider and reflect the fact that substantial additional research is necessary in establishing both rules for prevention of further contamination and also methods of cleanup. Lack of such research could stifle further economic growth and in turn may very well inhibit our ability to clean up existing problems.

We believe that the states should have the primary responsibility for groundwater legislation. As with the Clean Water Act, we believe that it would be appropriate to have a federally funded program which may be administered and additionally funded on a local level by the state. This obviously would require general guidelines on a federal level which would have to be followed by the individual states but would allow for directing the program toward particular problems on a state by state basis.

The federal government is probably in the best position for conducting or directing research and providing grant assistance for research at universities and perhaps at the state level relative to the health effects and impact of groundwater contamination. We believe that a program to further develop background information on the natural quality of groundwater on a regional or state basis is important and that such a program should be conducted on a state by state basis by in-state agencies or by joint effort of state and federal agencies. Such a program would not only define what background water quality actually is but would also help define where problems with water quality exist.

Providing of grant assistance to state programs such as the ongoing aquifer studies and a study of general groundwater quality would be helpful to supplement the existing program in Maine.

In conclusion, we do perceive groundwater contamination as a serious long-term problem which requires a commitment on both the federal and state level to be manageable in the future. We believe that local control of the program is very important since problems do vary substantially from region to region and can likely be best addressed on a local basis. It will, however, be necessary and it appears appropriate to apply federal funding through some method of grant assistance to research and in cleanup of particular sources of contamination. We also believe that it is important that industry, and in particular the construction industry, be in a position of providing input to developing guidelines for both control of future waste disposal and storage of potentially hazardous materials as well as toward cleanup of existing

problems. The experience of industry can be well utilized in the development of programs for controlling this potentially serious problem.

Clean up of existing problems should be an on-going process but must be prioritized so that the most severe problems are dealt with first. Looking beneath every landfill or small town dump is going to be counter productive.

Developing prevention plans based on our current and expanding technical ability will likely provide solutions for current, as well as future, problems.

Respectively submitted,

Associated General Contractors of Maine

Philip Lander
Stephen Cole
Michael Colwell, Committee Members

TESTIMONY OF BARRY S. TIMSON, MAYOR OF HALLOWELL
REPRESENTING THE MAINE MUNICIPAL ASSOCIATION

PROPOSED FEDERAL GROUND WATER PROTECTION LEGISLATION

UNITED STATES SENATE SUBCOMMITTEE
ENVIRONMENT AND PUBLIC WORKS

MAINE LEGISLATURE APPROPRIATIONS COMMITTEE HEARING ROOM
THURSDAY, JULY 2, 1987

SENATOR MITCHELL:

MY NAME IS BARRY S. TIMSON. I AM A RESIDENT AND THE PRESENT MAYOR OF HALLOWELL, MAINE -- A SMALL CITY OF APPROXIMATELY 2,500 CITIZENS JUST SOUTH OF AUGUSTA. I AM ALSO A CONSULTING GEOLOGIST FAMILIAR WITH THE GROUND WATER PROBLEMS WITHIN THE STATE.

I AM BEFORE YOU TODAY REPRESENTING THE MAINE MUNICIPAL ASSOCIATION REGARDING THE MUNICIPAL VIEWPOINT ON THE NEED FOR FEDERAL GROUND WATER PROTECTION LEGISLATION. IN DEVELOPING MY TESTIMONY, THE ASSOCIATION HAS CONFERRED WITH SEVERAL MUNICIPAL OFFICIALS THROUGHOUT THE STATE OF MAINE TO REACH A CONSENSUS POSITION ON THIS CRITICAL ISSUE. SEVERAL OF THESE MUNICIPAL OFFICIALS ARE STRUGGLING WITH VERY SERIOUS CONTAMINATION PROBLEMS.

At your suggestion, I am concentrating my testimony on answering the seven general questions which your letter of June 15 posed. Hopefully, my answers to these questions will be of sufficient detail to be of some use to you in developing a position regarding the need for a national ground water protection policy.

First, allow me to present an overview of Maine ground water use. While Maine is blessed with a relatively high annual precipitation rate and numerous surface water bodies from which drinking water is available, because of the sparse nature of Maine's population density, it is estimated that approximately 50% of Maine's citizens rely on ground water sources for potable water (Caswell, 1979). Half of this demand is met from individual wells and the remainder from municipal systems tapping a variety of ground water sources. Further, Caswell predicted an 8% increase of ground water use by municipal systems by the year 2020 and a 43% increase of use by individual wells.

My community, Hallowell, in response to new surface water quality standards required by EPA, is presently undertaking an investigation of available ground water sources to convert to ground water use from an existing surface reservoir. Ground water demand is likely to increase at a greater rate than Caswell originally predicted in 1979 as a result of these new EPA standards.

The availability of clean, potable ground water, now and in the future, is of paramount importance to Maine people.

1. MAINE MUNICIPAL OFFICIALS BELIEVE THAT GROUND WATER CONTAMINATION WITHIN MAINE AND THE REMAINDER OF THE COUNTRY IS AN INCREASING AND VERY SERIOUS PROBLEM. WITHIN THE STATE, DOCUMENTED SOURCES OF GROUND WATER CONTAMINATION INCLUDE: LEAKING UNDERGROUND FUEL AND CHEMICAL STORAGE TANKS; SALT-WATER CONTAMINATION FROM MUNICIPAL AND STATE SALT AND SAND PILES USED FOR HIGHWAY DE-ICING, AND SALT-WATER INTRUSION ALONG OUR COASTAL AREAS; PAST UNCONTROLLED AND UNREGULATED "MIDNIGHT DUMPING" OF TOXIC CHEMICALS; PESTICIDE RESIDUAL CONTAMINATION; LEACHATE CONTAMINATION FROM IMPROPERLY SITED AND DESIGNED SANITARY LANDFILLS; NITRATE-NITROGEN AND BACTERIA CONTAMINATION OF INDIVIDUAL WELLS FROM POORLY-SITED AND MALFUNCTIONING SUB-SURFACE SEWAGE SEPTIC SYSTEMS; AND RADON-CONTAMINATION OF INDIVIDUAL BEDROCK WELLS SITED MOSTLY IN GRANITIC TERRAINS.

IN ALL OF THE ABOVE CASES, WE DO NOT KNOW THE EXTENT OF GROUND WATER CONTAMINATION FROM EACH OF THE ABOVE SOURCES. WE KNOW THAT THEY ARE MORE PREVALENT THAN THE KNOWN CASES. SIMPLE PROBABILITY STATISTICS ASSURE US THAT THE GROUND WATER CONTAMINATION PROBLEMS DOCUMENTED IN SUCH COMMUNITIES AS HOPE (UNION CHEMICAL), FRIENDSHIP, AND WATERBORO REPRESENT ONLY THE SURFACE TIP OF THE ICEBERG. WHAT WE CANNOT SEE TODAY CANNOT BE PREVENTED. WITHOUT A DOUBT, MANY MAINE CITIZENS ARE UNKNOWINGLY NOW DRINKING WATER FROM INDIVIDUAL DUG AND DRILLED WELLS WHICH DO NOT MEET FEDERAL OR MAINE DRINKING WATER STANDARDS.

2. THE STATE OF MAINE HAS DEVELOPED A NUMBER OF PROGRAMS TO IDENTIFY AND RESPOND TO GROUND WATER POLLUTION PROBLEMS OVER THE

PAST FIVE YEARS. OF PARTICULAR HELP TO MUNICIPALITIES HAVE BEEN THOSE PROGRAMS WHICH HAVE LOCATED AND IDENTIFIED SURFICIAL SAND AND GRAVEL AQUIFIERS WITHIN COMMUNITY BOUNDARIES; A RECENT APPROPRIATION OF STATE MONIES FOR ASSISTANCE IN CLOSING LANDFILLS AND COVERING MUNICIPAL SALT PILES; PROVIDED TECHNICAL ASSISTANCE TO LOCAL PLANNING BOARDS IN ASSESSING THE IMPACTS OF PARTICULAR DEVELOPMENTS ON GROUND WATER QUALITY AND QUANTITY; ADOPTED HAZARDOUS WASTE AND UNDERGROUND FUEL TANK REGISTRATION REGULATIONS.

THERE EXISTS A STATE GROUNDWATER MANAGEMENT PROGRAM DIRECTED BY A STANDING COMMITTEE. FURTHER, A STATE GROUND WATER COORDINATOR EXISTS TO ASSIST AGENCIES AND MUNICIPALITIES IN PLANNING FOR FUTURE PROGRAMS AND CREATING AN EDUCATION PROGRAM.

ALL OF THE ABOVE PROGRAMS ATTEST TO A STATE COMMITMENT TO CLEAN GROUND WATER AND HAVE BEEN WELCOMED BY MUNICIPALITIES. HOWEVER, MUNICIPALITIES CAN ALSO FIND CRITICISM OF SOME STATE PROGRAMS, PARTICULARLY IN THE AREA OF HAZARDOUS MATERIALS/ HAZARDOUS WASTE CONTAMINATION, INVESTIGATIONS AND MITIGATION.

THOSE MUNICIPALITIES WITH IDENTIFIED HAZARDOUS AND PETROLEUM CONTAMINATION PROBLEMS CONTINUE TO COMPLAIN THAT CLEAN-UP EFFORTS ARE TOO SLOW; DISSEMINATION OF HEALTH RISK INFORMATION IS WITHHELD FOR FEAR OF CREATING UNWARRANTED LOCAL REACTION; AND MUNICIPALITIES ARE NOT AFFORDED ANY "CONTROL" OVER THE DEVELOPMENT OF ALTERNATIVE WATER SUPPLIES OR ACQUISITION OF "THIRD PARTY" PROFESSIONAL TECHNICAL ASSISTANCE TO ADVISE COMMUNITIES OF FEASIBLE ALTERNATIVES TO THE CLEAN-UP EFFORTS.

THE SLOWNESS OF CLEAN-UP AND HEALTH RISK IDENTIFICATION OF KNOWN GROUND WATER CONTAMINATION SITUATIONS HAS CREATED A "DISTRUST" OF STATE AND FEDERAL CLEAN-UP PROGRAMS WHICH APPEAR TO FOCUS UPON BLAME ASSESSMENT, HEALTH RISK/COST BENEFIT DETERMINATIONS, AND TIME-CONSUMING TECHNICAL ASSESSMENTS OF PROPER CLEAN-UP SCENARIOS RATHER THAN CONCENTRATING ON THE IMMEDIATE NEED TO REDUCE PUBLIC HEALTH RISKS AND PROVIDE ALTERNATIVE POTABLE GROUND OR SURFACE WATER SUPPLIES. SIMPLY PUT, MAINE COMMUNITIES WITH KNOWN SERIOUS GROUND WATER CONTAMINATION PROBLEMS VIEW THE EXISTING STATE AND FEDERAL CLEAN-UP EFFORTS AS BEING TOO BUREAUCRATIC. THEY VIEW STATE-SPONSORED CLEAN-UP PROGRAMS AS WOEFULLY UNDERFUNDED, TECHNICALLY-MISMANAGED, AND TOO SECRETIVE. YET MUNICIPAL OFFICIALS ARE THOSE OFFICIALS DIRECTLY RESPONSIBLE FOR THE PUBLIC HEALTH AND WELFARE OF THEIR NEIGHBORS. LOCAL OFFICIALS HAVE NO IMMEDIATE RESOURCES TO ASSIST THEIR CONSTITUENTS WHEN THE EMERGENCY NEED ARISES.

SOME OF THE MAINE GROUND WATER PROGRAMS WHICH MIGHT BE INCLUDED IN FEDERAL LEGISLATION INCLUDE:

A. GROUND WATER AQUIFIER IDENTIFICATION, MAPPING, AND CLASSIFICATION;

B. UNDERGROUND HAZARDOUS WASTE STORAGE SITING AND IDENTIFICATION;

C. GROUND WATER PROTECTION EDUCATION; AND

D. EXPANSION OF GROUND WATER CONTAMINATION CLEAN-UP PROGRAMS.

3. Clean, potable water is an essential human need. Ground water contamination problems are of such a magnitude and of such an unknown extent that it is both necessary and appropriate for Congress to develop and implement national ground water protection legislation.

4. The Clean Water Act is a comprehensive federal program to protect and clean up our nation's surface water supplies. Maine municipalities have been very supportive of this federal legislation, and have been able to see its effectiveness and success in cleaning up Maine's streams and rivers. Congress should consider a comprehensive Federal legislative program to protect and clean up our nation's ground water supplies.

5. The goals for Federal ground water legislation should include both prevention of contamination and mitigation of existing and future ground water contamination. Both areas are of significance, primarily from a financial standpoint. Since clean-up and providing alternative sources of clean water costs are so high, federal involvement is essential to adequately fund clean-up efforts. Further, in order to prevent costly mitigation, protection regulations are paramount to a successful legislative strategy.

6. The responsibility for ground water programs should be tri-partate -- federal government, state government, and local government. Again, I would point to the Clean Water Act as an example of a federal legislative and enforcement program which has worked at all three levels. While the Clean Water Act places

THE PRIMARY RESPONSIBILITY AT THE FEDERAL LEVEL, IT IS IMPLEMENTED BOTH AT THE STATE AND LOCAL LEVELS. THE CLEAN WATER ACT IS PRIMARILY SUCCESSFUL BECAUSE IT IS CONDUCTED AND IMPLEMENTED BY ALL THREE LEVELS OF GOVERNMENT, RECEIVING WIDE SUPPORT FROM THE CITIZENRY BECAUSE OF ITS IMPORTANCE AND VISIBILITY AT THE LOCAL LEVEL.

7. MAINE MUNICIPALITIES SEE THREE APPROPRIATE LEVELS FOR GROUND WATER LEGISLATION AND PROTECTION ACTIVITIES. THE FEDERAL GOVERNMENT SHOULD BE RESPONSIBLE FOR NATIONWIDE RESEARCH, RISK ASSESSMENT OF HEALTH EFFECTS, DEVELOPING ADEQUATE AND RAPID CLEAN-UP TECHNIQUES, AND PROVIDING GRANT PROGRAMS. STATE GOVERNMENT SHOULD BE RESPONSIBLE FOR DEVELOPING GROUND WATER PROGRAMS WHICH ARE PRIORITIZED TO THE REGION'S SPECIFIC GROUND WATER USES, GEOLOGY, AND CONTAMINATION PROBLEMS.

LOCAL GOVERNMENT SHOULD BE RESPONSIBLE FOR DEVELOPING AND SUPPLYING IMMEDIATE CLEAN WATER SOURCES FOR THOSE CITIZENS WHOSE WATER SUPPLIES HAVE BEEN CONTAMINATED OR ARE SUSPECTED OF BEING CONTAMINATED. I STRESS THIS ON THE BASIS OF THE EXPERIENCE OF MAINE MUNICIPALITIES WHICH HAVE BEEN IMPACTED BY GROUND WATER CONTAMINATION PROBLEMS AND MY OWN EXPERIENCE AS MAYOR OF A COMMUNITY WHICH RECENTLY WAS DECLARED AN EMERGENCY AREA DURING A FLOOD. DEVELOPING ALTERNATIVE WATER SUPPLIES MUST BE DONE QUICKLY AND WITHOUT REGARD TO RELATIVE HEALTH RISK ASSESSMENT COMPARISONS OF A PROBLEM IN ONE MUNICIPALITY OVER ANOTHER. FUNDING FOR SUCH A LOCAL PROGRAM MUST COME FROM THE FEDERAL GOVERNMENT, BECAUSE OF SMALL COMMUNITIES' LACK OF ACCESS TO IMMEDIATE CAPITAL. A PROGRAM SUCH AS LOCAL DISASTER LOAN

ASSISTANCE SHOULD BE MADE AVAILABLE FOR CREATING EMERGENCY ALTERNATIVE CLEAN WATER SUPPLIES.

8. EXISTING GROUND WATER PROGRAMS CONDUCTED BY THE STATE OF MAINE REQUIRE ADDITIONAL FUNDING ABOVE AND BEYOND THE CAPABILITY OF THE STATE. COMPREHENSIVE FEDERAL GROUND WATER LEGISLATION SHOULD INCLUDE FUNDING GRANTS TO THE STATE OF MAINE TO CONTINUE THESE PROGRAMS AT APPROPRIATE LEVELS.

I WISH TO THANK YOU FOR THE OPPORTUNITY TO PROVIDE TESTIMONY TO THE SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION AND HOPE THAT CONGRESS WILL ACT ON A NATIONAL GROUND WATER PROTECTION PROGRAM IN THE NEAR FUTURE.

BARRY S. TIMSON
MAYOR OF HALLOWELL, MAINE

MAINE AUDUBON SOCIETY
Gilsland Farm • 118 U.S. Route One • Falmouth, Maine 04105 • 781-2330
The responsible voice for Maine's environment and natural resources.

Testimony of
Dr. Michael L. Cline
Director of Research and Policy Analysis
Maine Audubon Society
before the hearing of the
Senate Subcommittee on Environmental Protection
Thursday, July 2, 1987

GROUND WATER TESTIMONY

The images Maine engenders for most people are of spectacular natural resources, whether it's tall stately white pine, vast boreal forest, or scenic rugged coastline. However, one of Maine's most precious and fragile natural resources is not visible. Ground water supplies drinking water for more than half of the State's population; the only source for rural residents. As such, the future health of both Maine's people and economy is greatly dependent on clean, abundant supplies of ground water.

Nearly everyone has heard tragic cases where ground water has been contaminated by the activities of man. These episodes are most often thought of in association with more heavily industrialized sections of the country. However, this assumption is simply not true, as events in Gray, Saco, Winthrop, and Houlton confirm. There are many human activities in Maine that threaten the quality of the State's ground water. Some of these are rather site specific (e.g. waste disposal sites, leaking underground storage tanks, salt water intrusion, and subsurface sewage disposal systems). Others result from non-point-source contamination such as runoff from agriculture, roadway de-icing, and accidental spills.

Nationally, the problem of disposing of human wastes has received much attention for a variety of reasons, some ecological and some economic. Poor siting and design of municipal landfills continues to pose contamination problems. EPA estimates that over 93,000 landfills are situated in the U.S., 75,000 which are industrial and 18,500 municipal. As of 1986, 25,000 of these sites were considered potentially hazardous. A 1983 Survey of Landfills, conducted by Waste Age Magazine, identified 12,991 municipal landfills nationwide; 2396 were open dumps. Of the dumps surveyed, 37 had artificial liners and only 1,609 had monitoring wells to detect ground water contamination. Additionally, there are 24,000 to 36,000 inoperative municipal landfills in the U.S. Household septage poses another serious threat to ground water. Private septic systems discharge an estimated one trillion gallons of waste annually which until recently were often cleaned using trichloroethylene, one of the most common pollutants of ground water.

This is the situation Maine and the rest of the nation faces. More than 600,000 Maine residents tap the estimated 100 trillion gallons of ground water from under the State. The Department of Conservation estimated that up to 10 percent of the sand and gravel aquifers in the State are polluted with nearly every town having some type of ground water contamination problem. The task of prioritizing the most serious sources of ground water contamination in Maine is difficult. Such a list would include leaking underground fuel tanks (estimated to leak 11 million gallons of petroleum products annually), landfills (containing a variety of noxious substances used domestically), non-point-source chemicals used in agriculture (including fertilizers and pesticides), and improperly functioning septic systems. Equally threatening is the danger stemming from salt water intrusion along the coast and radon contamination, a naturally occurring phenomena resulting from the geologic rock formations in Maine.

Maine began to take an active role with the Ground Water Protection Act of 1979 that classified the State's ground water as GW-A (suitable for public water supplies) or GW-B (suitable for all usages other than public water supplies). Unfortunately, this classification system is too general and has proven to be of little use. The state needs a tiered ground water classification system with specificity to land use improving on existing programs in place in Connecticut, Vermont, and Massachusetts. However, such a classification system should not sanction waste discharge to ground water. Ground water should have the same consideration given to surface water. Just as surface water must be "fishable and swimmable", with no discharge lowering quality below that standard, ground water needs equally specific standards.

The Maine State government has adopted several pieces of legislation which are excellent in purpose. The 1981 amendments to the Site Location of Development Law added new standards locating solid waste disposals and landfills away from aquifer recharge areas. The State also charged the Maine Geological Survey with mapping sand and gravel aquifers and bedrock aquifers throughout the state. These two mapping programs are augmented by the Well Drillers Information Act of 1987 which will compile information on water table depths and overburden from drilling contractors. These information gathering programs are vitally important to the implementation of ground water protection programs but have not received the financial support they deserve. The Sand and Gravel Aquifer Program funding has been cut by two-thirds and the Bedrock Program eliminated.

Effective ground water protection programs must be developed at the local level; but require information and knowledge of how to manage the ground water resource. Towns must know the locations and vulnerability of aquifers and incorporate these considerations in their planning process. Given adequate information, towns can develop ground water protection programs tailored to their own particular circumstances maintaining a day-to-day presence.

Utilizing the previously mentioned mapping programs, the State proposes to construct maps for towns to use in managing their ground water resource. Maps would include town property boundaries, transportation routes, aquifer boundaries, ground water vulnerability, well locations, potential threat locations, depths to water table, thickness of overburden, and direction of flow. This is exactly the type of program that is needed at the local level; however, to manage the data will require a geographic information system (GIS). The request for a GIS was eliminated from the 1987 budget.

In contrast to past efforts which have concentrated on clean up, a national ground water program should provide a framework for prevention of contamination. This program should develop a schedule for acquiring necessary basic ground water information (absolutely vital to states and communities) and facilitate the implementation within these areas. The program should also focus on reducing reliance on hazardous chemicals. Compliance should be a cooperative responsibility structured such that the Federal government would take over efforts in non-complying states. Incentives were the catalyst which drove the Clean Air and the Clean Water Acts and would enable states to more quickly implement the new program. These incentives might include Federal matching funds for general implementation, as well as incentives for specific, targeted, tasks. In the latter case, this might include returning portions of gasoline excise taxes to states actively removing leaking and abandoned fuel storage tanks and cleaning up resulting pollution.

Although specific action to protect and improve ground water quality will need to be implemented on the local level, a mandate at the Federal level is needed. This is a key element of Federal environmental legislation that is clearly lacking. Clean ground water should be on equal par with Clean Air and Clean Water legislation. A comprehensive national ground water protection plan should be implemented by a central administrative body coordinating Federal classification, monitoring, compliance, and clean-up programs. At present, this responsibility is fragmented among different agencies with gaping holes and duplication of effort. A national program should establish minimum standards for ground water quality which would serve to coordinate the great diversity of state laws. However, under no circumstances should such standards be used to imply an acceptable level of ground water pollution. Federal support would focus attention on ground water issues and enable states to acquire the funds necessary to cope responsibly with this issue. Ground water protection must involve the local, state, and Federal levels with the Federal government taking an active leading role. The actual implementation would be performed at the state and local level.

Maine Business

Maine Chamber of Commerce & Industry • 126 Sewall Street • Augusta, Maine 04330 • (207) 623-4568

TESTIMONY ON GROUNDWATER ISSUES

Senate Subcommittee on Environmental Protection
of the Senate Environment and Public Works Committee

July 2, 1987

Chairman Mitchell, members of the Subcommittee on Environmental Protection, I am Patricia Aho, Staff Attorney for the Maine Chamber of Commerce and Industry. MCCI represents over seven hundred members of Maine's business and industrial community. I am pleased to have the opportunity to address some of the issues surrounding groundwater management in Maine.

Groundwater is an important natural resource for drinking water, commercial and industrial processes, agricultural use and resource productivity. Current threats to groundwater include improperly sited and/or managed municipal and private landfills and leaking

underground storage tanks. Recently the Maine Department of Environmental Protection estimated that there are 26,000 buried fuel storage tanks in Maine. It is estimated that 30 percent of these tanks will leak before they can be replaced with acceptable facilities.

Landfills represent the current disposal option of choice in Maine. Currently 85% of municipal solid waste goes to either municipal or commercial landfills. Though it is expected that within the next five years, waste to energy recovery facilities will become the primary disposal option, landfills will remain an option. It is currently estimated that approximately 70% of municipal solid waste landfills have some known or suspected water quality problems.

Because of the threats that undergound storage tanks and landfills pose to groundwater, Maine has acted quickly and decisively. Two years ago, Maine's undergound storage tank law became a model for the rest of the country. In the past two weeks, Maine enacted a tough new comprehensive

act on solid waste management and disposal.

Maine has taken other active steps to protect its groundwater including developing a groundwater classification project, coordination of groundwater programs, and a program of mapping acquifers including recharge and discharge areas.

The State of Maine will continue to work on various programs and controls to protect groundwater. Groundwater is a resource which is a particularly local concern. Clearly, in some situations groundwater may cross jurisdictional boundaries, however in most situations an acquifer is of local concern. It is important that the people of a given area be allowed to determine how they want to protect and use their resource. Thus, Maine's decision regarding groundwater use and control may, and probably would be distinctively different than those of Ohio's for example.

Certain activities and decisions are most appropriately left at the local level: Mapping programs, monitoring programs, priority and decison making, program implementation, and resource use. Other activities are particularly suited for the federal level: health and risk assessment, research planning and development, and perhaps incentive programs such as grants.

During your examination of groundwater protection and management issues, I would suggest your review of two recent reports by the Environmental Protection agency, "EPA Activities Related To Sources of Ground-Water Contamination" and "Survey of State Ground-Water Protection Legislation 1985". These reports highlight the number of laws and regulations, both state and federal, which involve groundwater protection. MCCI believes that it may be more necessary and appropriate to coordinate these various laws and regulations, than to create another layer of regulation.

I appreciate your consideration of my testimony, and would be pleased to offer any further assistance to your examination of groundwater management and protection. I have attached a report, Maine's Groundwater for your review.*

Sincerely,

Patricia W. Aho
Staff Attorney
Maine Chamber of Commerce
and Industry

* Retained in committee files.